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Joint Printing Committee to Open Bids Nov. 23

Government Printing Office Will Use 36,943,000 Pounds of Paper During the First Six Months of New Year as compared with 39,972,000 Pounds During Current Six Months—Bidders Must Comply with Walsh-Healey Law

WASHINGTON, D. C., October 21, 1936—The Joint Congressional Committee on Printing has announced that it will receive bids on November 23 for the semi annual supply of paper for the Government Printing Office from January 1 next with a meeting to consider awards one week later.

It is estimated that the Printing Office will use 36,943,000 pounds of paper during the first six months of next year compared with 39,972,000 pounds being used during the present six month period.

Considerable interest is being shown this time because of the insertion in the contracts of provisions relative to the Walsh-Healey government contract act with which the paper industry will have to comply in order to obtain a contract.

Specifications Accepted by the Committee

Following are the recommendations of the Committee on Paper Specifications, which have been accepted by the Joint Committee.

The Committee on Paper Specifications respectfully submits its Thirty-second Report and the accompanying recommended schedule for paper for the public printing and binding and blank paper for the use of the Government departments and establishments in the District of Columbia for the term of six months, beginning January 1, 1937.

Very few changes have been found necessary either in the Instructions or the Schedule. The changes suggested are as follows:

Under "Packing", paragraphs 65, 66 and 67 have been modified to cover clearly the various methods of packaging the paper required by the Government Printing Office, and to make clear that certain kinds of paper are to be wrapped with waterproof wrappers.

Certain flat papers are to be delivered on skids, and on these lots a statement to this effect has been inserted immediately after the descriptive name of the paper in the schedule. The requirement heretofore carried that these lots should be securely banded full width has been omitted.

The thickness of the "Mimeograph Paper", Lots 43 and 44, has been raised to .0045 inch and .0055 inch in order to secure the desired finish.

Changes have been made in the colors specified under the 25% rag machine-finish cover paper, Lots 203 and 204. The 50% rag antique cover paper, Item 206, has been eliminated.

This schedule embraces 177 lots, being two less than in the preceding schedule. The quantity estimated for the term of six months beginning January 1, 1937, is approximately 36,943,000 pounds, as compared with 39,872,000 pounds for the previous contract period of six months.

Varieties and Quantities of Paper Wanted

Bids will be asked on the following paper quantities: 1,500,000 pounds newsprint paper. 3,990,000 pounds machine-finish book paper. 100,000 pounds antique book paper. 80,000 pounds lightweight machine-finish book paper. 210,000 pounds 50% rag machine-finish book paper. 10,000 pounds 75% rag laid antique book paper. 25,000 pounds 100% rag machine-finish book paper. 950,000 pounds supercalendered book paper. 250,000 pounds halftone book paper. 650,000 pounds coated book paper. 10,000 pounds lithograph paper. 3,700,000 pounds mimeograph paper. 300,000 pounds U S M O safety writing paper. 8,000 pounds U S M O writing paper. 4,000 pounds safety writing paper. 5,282,500 pounds writing paper. 270,000 pounds map paper. 945,000 pounds manifold paper. 5,977,000 pounds bond paper. 784,000 pounds ledger paper. 933,000 pounds index paper. 2,500 pounds tissue paper. 240,000 pounds cover paper. 440,000 pounds manila paper. 756,000 pounds kraft paper. 1,000 pounds paraffin paper. 400,000 sheets gummed paper, 179,000 pounds blotting paper. 2,500 pounds stereotype molding paper. 20,000 pounds oiled manila tympan paper. 2,000 pounds plate-wiping paper. 2,000 pounds back-lining paper, for case making. 10,000 pounds high finish red sulphite. 140,000 pounds manila tag board. 860,000 pounds calendered tag board. 20,000 pounds manila cardboard. 53,000 sheets railroad board. 350,000 pounds bristol board. 6,000,000 pounds United States postal card bristol board. 32,000 sheets pressboard. 4,000 pounds news board. 1,010,000 pounds chip and strawboard. 15,000 pounds marble grained board. 36,000 pounds box board. 390,000 pounds binder's board.

In cases where more than 1,000 reams are called for, proposals will be received for 1,000 reams or more.

Included in the instructions which will be sent to paper

(Continued on page 17)

Continental Makes Many Changes at Marinette

Twenty-Five Bag Machines and Some Printing Equipment from Rumford, Me., Mill, Added to Converting Plant to Absorb Output of Paper Mill—Super Calenders from Rumford Also Added to Absorb Further Tonnage.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, WIS., October 19, 1936.—Numerous changes have been made by the Continental Paper and Bag Corporation at its mills at Marinette, Wis., due to the shifting of production of some of its former grades to mills in the South, and the shutting down of its mill at Rumford, Me.

Twenty-five bag machines and some printing equipment were added at the converting plant to absorb the output of the paper mill rather than to reduce its tonnage because of the shift to Southern mills. This equipment was moved from the Rumford, Me., mill. The company also moved one of its supercalenders from Rumford to Marinette so as to absorb further tonnage.

Converting equipment for its Veldown line was moved to Marinette several months ago. A portion of the Seminole Tissue volume of the Rumford mill has now been transferred to the Marinette converting plant.

A. G. Stone, general manager, spent several days in Marinette last week to complete arrangements for the changes. He announced that the sales department is providing the Marinette mills with the type of products they are best equipped to handle.

Some changes also have been made in personnel. David Kuhe has been made manager of western properties for the company and will make his headquarters at Marinette. He was at one time employed at the company's mill at Oconto Falls, Wis., and after his graduation from the University of Wisconsin in 1923 as a chemical engineer was employed at Cloquet, Minn. In 1924 he was made chief chemist of the Continental plant at Rumford, Me. He was transferred in 1928 to the York Haven, Pa., plant as manager and remained there until a few months ago, when he took over the management of the Rumford mill.

Chester Childs, who has had several years' experience at the Rumford plant and also with the Nekoosa-Edwards Paper Company, Nekoosa, Wis., has taken charge of coloring and hydration at Marinette. Fred Bouffard is in charge of printing and bag manufacture. Perry Rounds also has been transferred from the Rumford mill and will be in charge of orders.

More Storage Reservoirs Advocated

After one of the most obnoxious summers on record for low water power supply even to the shutting down of mills, paper manufacturers of the Fox River Valley joined with many other groups in a hearing conducted by W. H. Holcombe, district engineer of the United States War Department office in Milwaukee, in urging a series of storage reservoirs on the upper Wolf River. The hearing was held at Oshkosh, Wis., last week, with approximately 200 attending.

City officials from Appleton, Neenah, Menasha and Kaukauna, Wis., in the paper mill area, all advocated the building of a series of dams to conserve the water supply and to prevent floods in the spring. C. R. Seaborne, engineer of the Thilmany Pulp and Paper Company, Kaukauna, Wis., was among those who spoke. He pointed to the need of an adequate supply of water the year around for power and navigation, and cited the increased expense of operations in trying to clarify the polluted water of the summer low stages so it could be used in paper manufacture.

All who attended were favorable to the reservoir plan except representatives from the Menominee Indian Reservation, whose spokesman said the annual tourist influx of 5,000 persons in its forest area would be affected by the desecration of scenery. They were assured, however, that the plan had been changed so the reservation would not be affected.

A resolution was submitted to Colonel Holcombe requesting an immediate and thorough survey of the entire area to determine proper locations for dams and reservoirs proposed. Results of the survey, it was believed, would be the convincing means of securing a federal grant. A tentative estimate on the cost of the dams is $2,250,000.

Paper Chemistry Institute Enrollment

Enrollment at the Institute of Paper Chemistry, Appleton, Wis., for the four-year course totals 41 students this year. They are from nine states and one Canadian province. The first-year students enrolled this fall are: Carl E. Ahlm, Minneapolis, Minn.; Henry J. Allison, Charlotte, N. C.; Richard J. Auchter, Port Edwards, Wis.; Paul C. Baldwin, Tully, N. Y.; John W. Bard, Antigo, Wis.; John C. Bletzinger, Coraopolis, Penna.; William J. Burich, Indianapolis, Ind.; Fred E. Culp, Columbus, Ohio; Ralph E. Glading, Lorain, Ohio; William S. Grimes, Gillespie, Ill., Robert D. Hinkel, York, Penna.; Harold H. Houtz, Niagara Falls, N. Y.; Leslie L. Larson, Blackfoot, Idaho; Allan T. Luey, Port Washington, N. Y.; Donald J. McLaurin, Victoria, B. C.; Robert W. Miller, Drum, Penna.; Malcolm B. Pineo, Swarthmore, Penna.; Robert O. Ragan, Filmore, Ind., and Herbert W. Rowe, Dayton, Ind.

New quarters recently opened at the Institute have been entirely absorbed by its activities. Additions to the staff account for most of the occupation of the new $100,000 building attached to the original Institute. Staff members now total 74.

News of the Industry

A substantial general increase in wages for all employees of the Nicolet Paper Company, DePere, Wis., was announced by company officials last week. The increase will become effective immediately. Reductions made during the business slump several years ago have been in effect up to the present time. A pickup in business and increased production were the reasons for restoring part of the cut.

New working capital of $300,000 will be provided the Consolidated Water Power Company, Wisconsin Rapids, Wis., a subsidiary of the Consolidated Water Power and Paper Company. The company will float a new $2,000,000 first mortgage bond issue November 1, to replace $1,700,000 of outstanding 5½ per cent bonds. The former issue has been called at 102 and accrued interest. They were issued in 1926 and were to mature in 1946. The entire issue has been subscribed privately and will not be placed on the market. It is understood a lower rate of interest will be in effect. The company operates hydro-electric plants at Stevens Point, Byron and Wisconsin Rapids, where Consolidated mills also are located.

Most of the fill-in work for the dykes and higher levels of highways have been completed for the storage reservoir under construction by the Wisconsin Valley Improvement Company on the Big Eau Plaine River, in Marathon County, Wis. A coffer dam has been built to hold back the river while a dyke is being built in the old channel. The water level has been raised about 17 feet in its old basin as a result. The river flow will be diverted to a new gate channel when the work is completed.

Using about 500 CCC boys and drought relief workers, the United States Forest Service expects to plant 5,500,500 pine seedling on 5,500 acres in the Moquah district of the Chequamegon National Forest this fall. Approximately one-half of the area is being replanted because of the drought. There will be 4,000,000 jack pines and 1,500,000 Norway pines obtained from nurseries at Rhinelander and Butternut, Wis., and Watersmeet, Mich.

Anticipating increased business, officials of the Soo Line have announced that 1,400 new 40-foot cars and 50 new 50-foot cars are being placed on the railroad for pulp and paper service. There has been an increase of 25 per cent in freight business.

Employees of the Nicolet Paper Corporation, De Pere, Wis., have applied for a charter in the International Brotherhood of Pulp, Sulphite and Paper Mill Workers. An organization meeting was held recently.

Thirty-six members of the Kimberly-Clark Engineers Club held a dinner and meeting at Conway Hotel, Appleton, Wis., last week. Dr. Otto Kress, technical director of the Institute of Paper Chemistry, was the speaker and his subject was, "Kraft Paper Industry."

Election of officers of the Riverview Country Club, Appleton, Wis., last week included several prominent in the paper industry. A. H. Thuerer of the Appleton Woolen Mills was elected, and T. E. Orbison, also of that company, secretary-treasurer. R. H. Purdy, general manager of the Tuttle Press Company, was elected a new member of the board of directors. C. B. Clark, president of the Riverside Paper Corporation, continues to serve on the board.

Champion Paper Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, October 19, 1936—The annual meeting of the Champion Paper and Fibre Company, was held at the offices of the concern on North B street, Hamilton, October 13.

The following directors were re-elected:—Alexander Thomson, Logan G. Thomson, Herbert W. Suter, Herbert T. Randall, C. C. Benedict, Harry G. Ponsford, James M. Hutton, Henry S. Bowers and Reuben B. Robertson, Sr.

Organization of the Board was effected by the re-election of the following officers:—Alexander Thomson, chairman of the Board; Logan Thomson, president Reuben Robertson, executive vice-president; H. W. Suter, vice-president; Reuben Robertson, Jr., vice-president; Clarke Marion, vice-president; Scott Zoller, secretary-treasurer; J. L. Henson, controller and assistant secretary; C. S. Bryant, assistant treasurer, and W. J. Damtoft, assistant secretary.

Regular dividends on common and preferred stocks were declared, with 25 cents on common, payable November 15 and the preferred dividend of $1.50 payable January 2.

Progress in the construction work on the new plant at Houston, Texas, was reported by Mr. Robertson, the executive vice-president of the Hamilton company. It is expected the mill will be in operation about February 1.

Geo. J. Adams Heads Safety Section

George J. Adams, of the International Paper Company, Glens Falls, N. Y., was elected general chairman of the Paper and Pulp Section of the National Safety Council at the annual meeting held recently at Atlantic City, N. J. Other officers were elected as follows:

Vice-chairman in Charge of Membership, Arthur E. Winslow, Hollingsworth & Whitney Company, Waterville, Maine.

Secretary and Program Committee Chairman, F. A. Robinson, Kimberly-Clark Corporation, Neenah, Wis.

News Letter Editor and Publicity Committee Chairman, Clayton Braatz, Marathon Paper Mills, Rothschild, Wis.

Contest Committee Chairman, A Scott Dowd, The Paper Industry, Chicago.

Engineering Committee Chairman, D. B. Chant, Ontario Pulp and Paper Makers' Safety Association, Toronto, Ont., Can.

Health Committee Chairman, Dr. Edward W. Paine, Hollingsworth & Whitney Company, Waterville, Maine.

Poster Committee Chairman, J. H. Turner, Consolidated Paper Corporation, Ltd., Montreal, P. Q., Canada.

Statistics Committee Chairman, Fred W. Braun, Employers Mutuals, Wausau, Wis.

Members At Large, Ernest Augustus, Mead Corporation, Chillicothe, Ohio. W. J. Brennan, Maine Department of Labor and Industry, Augusta, Maine. M. W. Dundore, Beloit Iron Works, Beloit, Wis. W. L. Faist, The Champion Paper and Fibre Company, Hamilton, Ohio. W. A. Gleason, Hammermill Paper Company, Erie, Pa. E. E. Grant, The Crystal Tissue Company, Middletown, Ohio. J. J. Hastings, Port Huron Sulphite and Paper Company, Port Huron, Mich. C. O. Holmer, Minnesota & Ontario Paper Company, Minneapolis, Minn. F. L. Irvin, St. Croix Paper Company, Woodland, Maine. D. A. McAlery, Fraser Companies, Ltd., Edmunston, N. B., Canada. Don E. McDowell, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich. Arthur Murray, Container Corporation of America, Chicago. H. G. Noyes, Oxford Paper Company, Rumford, Maine. J. J. Plzak, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. Samuel Pruyn, Finch-Pruyn Company, Inc., Glens Falls, N. Y. B. D. Rogers, Bird & Son, Inc., East Walpole, Mass. F. H. Rosebush, Nekoosa-Edwards Paper Company, Port Edwards, Wis. L. R. Simpson, The Brown Paper Mill Company, Inc., West Monroe, La. A representative of the American Paper and Pulp Association, an appointment to be requested of Secretary Charles W. Boyce.

Sacandaga Reservoir Boon To Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., October 19, 1936—Edward H. Sargent, chief engineer of the Hudson River Regulating District Board, declared this week that the newly constructed Sacandaga Reservoir has been a boon to industrial activities on the Upper Hudson River by supply water for power. Paper mills and other industries managed to keep going during the drought of the past summer which was the most extensive in history, according to Mr. Sargent. During the recent drought the huge reservoir furnished 55 per cent of the water flow in the Hudson at this point and it is now supplying 40 per cent. The reservoir was constructed at an estimated cost of $12,000,000 and it has already saved the state and property owners considerable by controlling floods in addition to aiding industries during drought periods. Each year prominent paper mills and industries in this section are taxed a certain amount for the maintenance of the huge artificial reservoir.

Container Corp. Reports Increased Net Income

Earnings for Third Quarter Ending September 30 Were $405,987, Compared with $394,174 in Corresponding Period Last Year — Income for Nine Months $887,832, Equal to $1.36 a Share, Against $826,319 Last Year.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 19, 1936—The Container Corporation of America last week reported an increase in net income for the third quarter to 62 cents a share on the common stock as compared with 60 cents a share last year. Net income for the three months ending September 30 was $405,987 compared with $394,174 in the corresponding period a year ago. The earnings were after reserves for year end adjustments and federal income taxes. Third quarter statements were affected by the recently established company policy of allowing employees a full week's vacation with pay. In the nine months to date, net income of the big concern with headquarters in Chicago, was $887,832, equal to $1.36 a share, against $826,319 or $1.26 a share for the comparative 1935 period. In the twelve months ending September 30 net income was $1,299,522 or $1.99 a share as compared with $1,176,170 or $1.80 a share for common stock in the preceding twelve months. Indicative of conditions was the report centering around dollar sales, the dollars sales volume for the nine months being 8 per cent greater and tonnage volume 13 per cent greater than a year ago. Future business booked also showed a material gain over the same period last year. Statements issued locally made no particular mention of the building program of the Container organization.

Robinson-Patman Act Discussed

The interest of the paper industry was centered in Chicago last week as various meetings were held at the Knickerbocker and Drake Hotels. The Writing Paper Manufacturers Association met October 14 at the Drake, with the Sulphite Bond Executive Committee getting together in the morning session and the Sulphite Bond Group in the afternoon. The chief topic of discussion centered around the existing position of the industry as it may or may not be applied to the Robinson-Patman Act.

The Book Paper Manufacturers Association also held a general meeting at the Drake and it is reported that the provisions of the Robinson-Patman Act were also up for major discussion.

Earlier in the week the Groundwood Paper Manufacturers Association met in Chicago at the Hotel Knickerbocker under the direction of Dr. E. C. Merchant. Committee meetings were held on the morning of October 13 and the General Meeting of the Association was carried out the same afternoon. The Kraft Paper Association, with S. M. Hudson directing the sessions, will meet at the Drake Hotel with a morning general meeting on October 20 and further discussions on the following day.

Paper Business Trend Upward

The rapid fire series of meetings held in Chicago during the past month seems to have added more stimulus to the general improvement recently noted. The majority of the lines are showing an upward trend with the fundamental underlying conditions reported as basically sound. Kraft papers continue to show a healthy position with the favorable reports of mill production being backed up by good retail distribution. Mill production in book and cover papers has indicated that improvement in Chicago in these lines is simply following the trend. Fine papers, in general, are experiencing a good Fall business with indications pointing to a continuation of this favorable condition until at least the first of the year. Newsprint and groundwoods have responded to the general improvement in business and the strengthening process reported in other lines seems almost assured for what has been termed the more backward lines within the industry. The meetings to be held in Chicago this week and next are figured to be beneficial to the sulphite bond and kraft groups according to local reports. Waste papers continued to show more strength, particularly in those grades where mill production has shown a marked upward trend.

Use of Paper and Intelligence Record

Phil Hanna, editor of the *Chicago Journal of Commerce,* brings home to Chicago an interesting story from Wausau, Wis. He writes that there is a direct connection between use of paper and intelligence and the paper makers have the figures. He finds that government statistics show that average intelligence is in proportion to the per capita consumption of paper. The genial editor of the Chicago business daily gives further publicity to the neighboring State by writing that there are 55 paper mills in Wisconsin, making all grades from strawboard to the finest bond writing paper. The annual output, he states, is 787,000 tons of pulp and 1,159,000 tons of paper. The mills have a 77,000,000 a year turnover. The first paper mill in the State was in Milwaukee, newsprint being made from rags and the turnover about two tons a week. This was in 1848. In 1857 mills were erected at Beloit, Whitewater and Appleton and afterwards sprung up along the banks of the Fox River. Today the paper mill investment in Wisconsin aggregates $125,000,000 or $45 per capita.

News of the Industry

The annual session of the Newspaper Advertising Executives Association, now going on in Chicago, is, of course, of interest to newsprint executives who realize that increased advertising lineage results in a more extensive consumption of newsprint. The association has adopted a program for "selling newspapers as an advertising medium"—a joint effort of the association and the Newspaper Advertising Representatives of both New York and Chicago. A three year program to cost $400,000 annually is to be scheduled to aid advertisers, agencies and prospective advertisers in evaluating newspapers as an advertising medium. Carried out successfully, the program may mean a beating back to further newsprint volume.

During the absence of Jack Burrus, Albemarle Paper Company, vice president of the Western Division of the Salesmen's Association of the Paper Industry, R. C. Johnson, president, presided at the Monday, October 12, meeting at the Hotel Sherman. The weekly session was largely given over to a discussion of probable happenings at the series of meetings being held in Chicago this week.

A rate of 23½ cents per 100 pounds on imported wood pulp from New York to Carthage, Indiana, has been approved by the Traffic Executives Association according to word reported here which further states that the rate will also be extended to Wabash, Elkhart, both in Indiana, and Niles, Mich. The usual port differentials will apply.

Paper Demand Well Up to Average In Boston

Kraft Mills Late on Deliveries, Due to Large Volume of Orders—Request for Various Grades of Fine Paper Less Active—Tissues Moving In Heavy Volume — Business Highly Competitive, with Prices Below Normal.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 19, 1936—Demand for paper in all lines, both fine and wrapping, averaged good in the market here during the week, although it was stated in some quarters of the fine paper division that the holiday lessened business somewhat. There was a little tightening up in the prices of tissues, in which the tonnage was excellent, with mills behind on deliveries. Business is still highly competitive in tissues, with prices below normal. A slight advance would bring price levels back to normal. In kraft generally, mills are late on deliveries, they have such a volume of orders.

Box Board Prices Advance

With advances in the price of paper stock, box board has shown an appreciation in value, some grades rising $2.50 a ton. Box board manufacturers have received a substantial volume of orders of late for their product, which they have sold at the same figures which had prevailed for some time, but conditions have compelled them to ask higher prices. These changes were virtually the first since July, 1934, when prices went down to levels which have been current during the intervening period, a little more than two years. Filled news board has advanced on the minimum side to $42.50 from $40.00, making the range $42.50@$45.00. Chip board has risen on both sides of the range, to $40.00@$42.50 from $37.50@$40.00. Similarly, single manila lined chip has advanced to $50.00@$55.00 from $47.50@$52.50. The minimum figure on single white, patent coated news board (bender) is $60.00, compared with $57.50 and a few weeks ago $55.00, with the maximum at $65.00. All of these prices are "delivered New England points." The paper box business in all lines, setup, folding and corrugated was reported in good volume.

The paper stock market continued strong and, in some grades, active. In old papers, old newspapers were particularly in demand. Manila rope was steady and other grades fairly steady, with values unchanged. New domestic rags held at the same levels, with most of the bleachable stock moving. A few inquiries were reported for new fancy shirt cuttings, but dealers held this commodity firmly. Fancy shirt cuttings were quotable at .03@.03¼ f.o.b. Boston, some dealers asking .03⅜@.03½, but no verified sales at the latter figures are reported. Old domestic rags held steady, except that roofing stock advanced. The No. 1 grade rose to 1.50@1.60 from 1.45@1.50, No. 2 to 1.35@1.45 from 1.25@1.35, and No. 3 to 1.25@1.30 from 1.15@1.25, all f.o.b. Boston. Foreign rags were strong, with a few sizable sales in dark cottons and old linsey garments at the same prices which prevailed the previous week.

News of the Industry

John C. Hurd, executive secretary of the New England Paper Merchants Association, is sending out notices to members of the Fine Paper Division, urging them to have their young men join the Junior Craftsmen group of the Boston Club of Printing House Craftsmen.

Mr. Hurd is to visit the National headquarters of the National Paper Trade Association of the United States in New York the latter part of this week to confer with the National executives and the legal council.

Henry W. Ford, manager of the fine paper specialty department of the Andrews Paper Company, left Boston Wednesday night, so as to be in Philadelphia, Thursday, and New York city, Friday.

Gordon E. Emerson, treasurer of E. Butterworth & Co., Inc., paper stock dealers, was in New York City and Pennsylvania a few days last week.

Kenneth A. Mackenzie, salesman of stained shingles for Samuel Cabot, Inc., Boston and Chelsea, Mass, has resigned his position to become sales manager for the Pulp Products Company, 60 East 42nd street, New York City.

Thomas H. Daly, one of the oldest men in the trade, having been with John Carter & Co., Inc., more than forty years, is ill at his home in this city.

John H. Brewer, general manager of Storrs & Bement Company, has returned from a trip to Chicago. While there he sold a ton of rag-content bond.

The meeting of the Fine Paper Division of the New England Paper Merchants Association, which was to have been held October 6, has been postponed until Wednesday of this week.

Frank L. Hand Dead

Frank L. Hand, aged 49, salesman for the Cook-Vivian Company, who was highly respected by the paper trade, including his competitors, died Wednesday night at his residence, 170 Union street, Randolph, Mass. During the many years he had been with the Cook-Vivian Company, he had won the affection and high regard of all. He was an excellent salesman. Before and during the funeral a very large number called at the house, including almost the entire staff of his company. Mr. Hand had been ill for a long time. During the World War, he served in France with Company L, 302nd Infantry. He was a member of the Lt. Thomas W. Desmond Post, A. L., and Vera Cruz Council, K. C.

A military funeral was held Saturday at his late home, with a solemn high mass of requiem at St. Mary's Church. Burial was in St. Mary's Cemetery, Randolph.

Now Canton Div. of Champion Fibre

The management of the Champion Fibre Company announces that in order to develop a simplified financial structure, and because of the provisions of the 1936 Federal Revenue Act, it has been deemed advisable to discontinue the Champion Fibre Company as a separate corporate entity. The business and the properties of the Champion Fibre Company have been transferred to the Champion Paper and Fibre Company.

There will be no change in policy, in management, or in personnel and the business at Canton will continue to be operated as in the past but carried on by and in the name of the Champion Paper and Fibre Company, Canton Division.

We trust that we may continue to merit the confidence of our friends and that the pleasant relations that have heretofore existed between us may be continued without interruption.

Ontario's Pulpwood Exports Arouse Interest

Criticism Arises from Fact that Choice Spruce Is Being Cut and Exported to United States, Depleting Some of Best Crown Lands in the Most Available Areas — Dr. Herty's Discovery of Fats in Pine Arouses Interest.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 19, 1936—There is considerable discussion going on in pulp and paper circles regarding the amount of pulpwood in northern Ontario which is being exported to the United States from Crown lands of the province. Criticism arises from the fact that choice spruce is being cut and exported. This depletes some of the best Crown lands in the most available areas. It is said that American buyers are apprehensive that a stop will be put to pulpwood export sooner or later in the interest of conservation. It is stated that stocks are being piled up several years ahead of needs and that some United States paper companies regard this as good insurance against the prospect of higher wood costs later if Ontario supplies are cut off in response to public demand. Even greater export volume is foreseen as cutting rights to some 350,000 cords of choice spruce have been given to jobbers and others operating this season on Crown lands at the head of the Great Lakes. The old policy of advertising timber limits for sale has been abandoned in favor of annual contracts for pulpwood cutting.

About 800 licenses have been granted this year to harvest pulpwood from Crown lands and some 3,500 men are reported to be at work in the bush on domestic and foreign contracts. It has always been legal to export pulpwood from patented or privately owned lands and the present controversy relates to wood exported from Crown lands.

Hon. M. F. Hepburn, Premier of Ontario, contends that, under the former export ban, millions of cords of wood came up the St. Lawrence river annually headed for American mills. He states that this wood went right past great acreages of Ontario wood which was rotting. He also claims that as result of the change in the policy of the government the timber situation is the brightest spot on the industrial horizon today. Opponents of exports of pulpwood from Crown lands contend that the improvement has occurred in spite of the government policy and that recovery would even be swifter under an export ban. Mr. Hepburn asserts the government will never allow timber limits to get tied up as in the past and that operations will be opened up by taking away the limits from people to whom they should never have belonged. He adds that the best results can be obtained by issuing annual permits.

The pulpwood for the Abitibi Company is drawn about one half from Crown lands. Great Lakes Paper Company has its own limits but has been buying wood cut on Crown lands almost altogether. The Minnesota and Ontario Company has no limits at all and buys nearly all its wood from Crown lands.

Dr. Herty's Discovery Arouses Interest

Much interest is being taken in local pulp and paper circles regarding the recent announcement of Dr. Charles Herty, Savannah, Georgia, that he had discovered fat in pine trees and to a lesser extent in spruce and that with the fats he had found a cheap easy way of extraction which promised two new industries.

F. Grant Marriott, wood chemistry expert of the Forest Products Laboratories, Ottawa, in a recent interview said that he believes Dr. Herty was the first man to have identified fats and waxes found in pine and spruce trees. Mr. Marriott added that difficulties which are not insurmountable lie in the way of the pine paper manufacturer, and in Canada the great supplies of spruce and balsam render it unnecessary to use this resinous type of wood.

Dr. C. D. Howe, Dean of the Faculty of Forestry, University of Toronto, said that he was familiar with Dr. Herty's work, and that he knew him as a reliable man. Dean Howe declared that it was quite possible that fat extracted from pine and spruce trees might be the means of establishing a new by-product industry or industries in connection with pulp and paper manufacturing. He added there was fat in all trees, but was cautious in making predictions concerning its possible significance to the flourishing pulp and pulpwood industry in Canada.

General News of the Industry

The Fort Frances Pulp and Paper Company, Fort Frances, Ont., after a recent conference with the town council in regard to arrears of taxes, forwarded a cheque for $26,000 to the civic treasury as part payment of the 1935 taxes. This, with the payments already made, brings the total amount paid on the 1935 taxes about $40,000. F. A. Morris, of the Fort Frances Pulp and Paper Co. stated that when a satisfactory settlement is arrived at the company would only take a short time to pay the 1935 and 1936 taxes in full.

The Abitibi Power and Paper Company have taken out a permit to cut pulpwood during the coming season on its own limits and those of the Algoma Central Railway. The company will employ eleven hundred men.

It is announced that London and American capitalists are providing the finances for putting into operation the kraft mill of Vancouver Kraft Mills Ltd. at Port Mellon, B. C., and that production will start early in 1937. The rail, dock and other facilities were built in 1928, and the mill was virtually completed when the market for kraft collapsed, followed by a complete shut-down of construction.

The Pigeon Timber Company, of Fort William, Ont., is having large camp buildings constructed on the east side of Big Dog Lake, in preparation for the housing of some 350 men who will be engaged throughout the winter in cutting pulpwood. It is stated that about 35,000 cords will be cut and hauled on to the ice of Big Dog Lake. D. M. MacDonald representing the company was a recent visitor to Kaministiquia, Ont. and made contracts for pulpwood with many settlers. The prices paid this year are $5.50 per cord for spruce and $4.50 per cord for balsam delivered on the banks of the Kaministiquia River. This is an increase of 25 cents per cord over last year's prices.

A provincial charter has been granted the General Timber Company Ltd., with head office in Toronto, and an authorized capital of $100,000, to carry on the business of lumbering and the timber trade in all its branches, as well as to buy, sell and deal in all kinds of logs, poles, posts, railway ties, piling, pulpwood, paper and other by-products. Among the provisional incorporators are Leonard G. Masson and Thomas L. Savage, of Toronto.

Lake States TAPPI Discusses Pulp Wood

The Lake States Section of the Technical Association of the Pulp and Paper Industry convened Tuesday, October 13, 1936, at 6:30 p. m. at the Conway Hotel in Appleton, Wis. Over 125 members and guests attended.

The first paper "Logging Present Methods and Equipment for Kraft, Soda and Sulphite Pulp," by Frank Kelly of Cloquet, Minn., was read by R. F. Rogers. "Pulp Wood Transportation, Rail, Raft and Steamer," was discussed by Vince Marten of Munising, Mich. R. F. Roger of Kimberly-Clark Corp. discussed the "Scaling and Measuring of Wood." Reforestation was discussed by F. G. Kilp of the Nekoosa Edwards Paper Co. An interesting general discussion followed the presentation of the papers.

These meetings will be reported by R. D. Rusch, W. K. Ulm and Al Moss of the Institute of Paper Chemistry.

Those Who Attended

Those present included:

Emeran Ahles, Mosinee Paper Mills Company, Mosinee, Wis.; F. L. Aldrich, Consolidated Water Power and Paper Company, Appleton, Wis.; M. S. Apple, Fort Howard Paper Company, Green Bay, Wis.; S. I. Aronovsky, Institute of Paper Chemistry, Appleton, Wis.; J. A. Auchter, Nekoosa-Edwards Paper Company, Port Edwards, Wis.; R. J. Auchter, Institute of Paper Chemistry, Appleton, Wis.; G. A. Baker, Duriron Company, Chicago, Ill.; L. G. Barlow, Crane Company, Oshkosh, Wis.; A. L. M. Bixler, Institute of Paper Chemistry, Appleton, Wis.; G. J. Brabender, Marthon Paper Mills Company, Rothschild, Wis.; R. W. Brenzel, Thilmany Pulp and Paper Company, Kaukauna, Wis.; M. A. Buchanan, Institute of Paper Chemistry, Appleton, Wis.; W. H. Burns, Valley Iron Works, Appleton, Wis.; R. L. Caldwell, Rhinelander Paper Company, Rhinelander, Wis.; C. J. Christiansen, Mathieson Alkali Works, Chicago, Ill.; W. C. Christinsen, Hoberg Paper Mill, Green Bay, Wis.; B. Cowan, Standard Oil Company, Appleton, Wis.

David DeZurik, DeZurik Shower Company, Sartell, Minn.; E. E. DenDooven, Hoberg Paper Mills Company, Green Bay, Wis.; P. A. Farrell, Marathon Paper Mills Company, Rothschild, Wis.; J. R. Fanselow, Kimberley-Clark, Corporation, Neenah, Wis.; W. P. Feeney, Appleton, Wis.; H. L. Fitze, Tomahawk Kraft Paper Company Tomahawk, Wis.; Sigge Ekman, Rhinelander Paper Company, Rhinelander, Wis.; G. F. Enderlein, Mosinee Paper Mills Company, Mosinee, Wis.; J. A. Extrom, Tomahawk Kraft Paper Company, Tomahawk, Wis.; A. L. Gnewuch, Hoberg Paper Mills, Inc., Green Bay, Wis.; F. R. Goddard, Nekoosa-Edwards Paper Company, Port Edwards, Wis.; Paul Grady, Kimberley-Clark Corporation, Neenah, Wis.; J. H. Graff, Institute of Paper Chemistry, Appleton, Wis.;

J. P. Hagenauer, American Paper and Pulp Association, New York City; William Harwood, Thilmany Pulp and Paper Company, Kaukauna, Wis.; Herb Heilig, Director Vocational Education, Appleton, Wis.; H. T. Holbrook, Wadhams Oil Company, Milwaukee, Wis.; L. J. Hoberg, Hoberg Paper Mills, Inc., Green Bay, Wis.; C. M. Holt, Diamond Alkali Company, Appleton, Wis.; W. F. Holzer, Rhinelander Paper Company, Rhinelander, Wis.; J. D. Houston, Taylor Instrument Company, Appleton, Wis.; T. A. Howells, Institute of Paper Chemistry, Appleton, Wis.; J. F. Inderdohnen, The Bristol Company, Milwaukee, Wis.; E. C. Jacobi, Standard Oil Company, Green Bay, Wis.; Hans John, Kimberley-Clark Corporation, Neenah, Wis.; Charles Johnson, Institute of Paper Chemistry, Appleton, Wis.; W. A. Johnson, Hoberg Paper Mills, Green Bay, Wis.; W. M. Justesen, Mosinee Paper Mills Company, Mosinee, Wis.

F. G. Kilp, Nekoosa-Edwards Paper Company, Port Edwards, Wis.; R. E. Kissil, Hoberg Paper and Fibre Company, Green Bay, Wic.; H. B. Kellogg, Kimberley-Clark Corporation, Neenah, Wis.; A. G. Kernin, Mosinee, Wis.; C. M. Koon, Institute of Paper Chemistry, Appleton, Wis.; Otto Kress, Institute of Paper Chemistry, Appleton, Wis.; Gil H. Krohn, Globe Steel Tube Company, Milwaukee, Wis.; Stephen Kukolich, Neenah Paper Company, Neenah, Wis.

E. M. Leavitt, Thilmany Pulp and Paper Company, Kaukauna, Wis.; Russell J. LeRoux, Interlake Pulp and Paper Company, Appleton, Wis.; Harry F. Lewis, Institute of Paper Chemistry, Appleton, Wis.; Otto Leitz, Mosinee Paper Mills Company, Mosinee, Wis.; Frank R. Lillie, The Crane Company, Chicago, Ill.; N. L. Malcove, Northern Paper Mills, Green Bay, Wis.; J. V. Martin, Munising Paper Company, Munising, Mich.; A. D. Merrill, Chemipulp Process, Inc., Watertown, N. Y.; Howard Morgan, Institute of Paper Chemistry, Appleton, Wis.; Al Moss, Institute of Paper Chemistry, Appleton, Wis.; S. W. Murphy, Appleton, Wis.

R. A. Nugent, Nekoosa-Edwards Paper Company, Port Edwards, Wis.; W. B. Pusey, Valley Iron Works, Appleton, Wis.; J. H. Quell, Interlake Pulp and Paper Company, Appleton, Wis.; Charles H. Reese, Nekoosa Edwards Paper Company, Port Edwards, Wis.; Will Risk, Wadhams Oil Company, Milwaukee, Wis.; R. F. Rogers, Kimberley-Clark Corporation, Neenah, Wis.; J. B. Roskams, Hoberg Paper Mills, Green Bay, Wis.; Robert Rusch, Institute of Paper Chemistry, Appleton, Wis.; H. A. Schauer, Hasco Valve and Machine Company, Milwaukee, Wis.; Ralph L. Shaw, W. A. Jones Foundry and Machinery Company, Milwaukee, Wis.; Howard Sheldon, Hoberg Paper Company, Green Bay, Wis.; A. K. Smith, Institute of Paper Chemistry, Appleton, Wis.; John Sobota, Fort Howard Paper Company, Green Bay, Wis.; John E. Spaulding, Institute of Paper Chemistry, Appleton, Wis.; C. E. Stoke, Tomahawk Kraft Paper Company, Tomahawk, Wis.

R. W. K. Ulm, Institute of Paper Chemistry, Appleton, Wis.; I. R. Valentine, Jr., Fox River Paper Company, Appleton, Wis.; R. W. Van Kirk, Penick & Ford, Ltd., Cedar Rapids, Iowa; R. J. Vechinski, Combined Locks Paper Company, Combined Locks, Wis.; Ervin J. Vickman, Hoberg Paper Mills, Inc., Green Bay, Wis.; Edward H. Voigtman, Kimberly-Clark Corporation, Neenah, Wis.; Charles L. Wagner, Marathon Paper Mills, Rothschild, Wis.; C. J. Wassenberg, Interlake Pulp and Paper Company, Appleton, Wis.; James E. Watson, Wisconsin Wire Works, Appleton, Wis.; S. D. Wells, Combined Locks Paper Company, Combined Locks, Wis.; Earl R. Williams, Neenah Paper Company, Neenah, Wis.; Kenneth R. Wink, Kimberly-Clark Corporation, Kimberly, Wis.; Ronald L. Youngson, Marathon Paper Mills Company, Nenasha, Wis.; R. J. Zaumeyer, Kimberly-Clark Corporation, Neenah, Wis.

Wm. J. Brown 45 Years With Laurentide

Wm. J. Brown, of Montreal, recently completed forty-five years service with the Laurentide Paper Company and its successor, being at present a member of the staff of the St. Maurice Valley Paper Company.

Ohio TAPPI Discusses Titanium

The Ohio Section of the Technical Association of the Pulp and Paper Industry held its first dinner meeting of the Fall and Winter Season at the Manchester Hotel, Middletown, Ohio, Saturday, October 17, 1936.

A short business session followed the dinner. The Articles of Organization of the Ohio Section as drafted by the By-Laws committee under the chairmanship of J. F. Ohlson were read by the secretary for the approval of members of the Section. The members voted to accept the Article as drafted after a motion to that effect made by H. H. Harrison of the Crystal Tissue Company, and seconded by H. B. Schapiro of the Ohio Boxboard Company.

A report of the nominating committee given by H. W. Laymon of The Mead Corporation nominated the present officers to serve another term. Then G. C. Munro and H. H. Harrison were nominated from the floor to serve on the Executive Committee. A motion was passed to accept the nominations. The present nominees are: Chairman, V. F. Waters of the Champion Paper & Fibre Company; First Vice-chairman, J. J. O'Connor of the Mead Corporation; Second Vice-chairman, H. H. Lattimer of the Beckett Paper Company; Secretary-Treasurer, C. D. Roess of the Wrenn Paper Company; Executive Committeemen, G. H. Harvey of the Gardner Richardson Company, G. C. Munro of the Champion Paper and Fibre Company, and H. H. Harrison of the Crystal Tissue Company. Election of officers will be held at the meeting of the Ohio Section, next January.

Chairman Waters read a letter from the national secretary of TAPPI, R. G. Macdonald, concerning the holding of the National Fall Meeting of TAPPI in the Midwest, and possibly in the Miami Valley district. Any comments concerning this matter should be sent to the Ohio Section secretary Carl D. Roess, Wrenn Paper Company, Middletown, Ohio.

The members present stood in silent memory of the late J. H. Wallace, a charter member of the National Asociation of the Pulp and Paper Industry and also chairman of the Organization Committee of the Ohio Section. Mr. Wallace had been for many years a prominent figure in the Paper Industry and its technical developments.

The speaker of the evening, W. R. Willets of the Paper Development Laboratory of the Titanium Pigment Company, was introduced by Chairman Waters. Mr. Willets presented a very interesting paper entitled "Titanium Pigments—A Review," covering the early history, source of supply, refinement, composition, properties, development of uses of titanium pigments in various industries, and finally its introduction into the paper industry in Germany 1928 and in this country in 1931. His talk dealt on the methods of application of titanium as beater filler and at the wet end of the paper machine and explained its rapid development in the paper industry as resulting from the advantageous effect this pigment has on the color, opacity, and brightness of paper. A very lengthy discussion followed, indicating the general interest in this relatively new pigment. A vote of thanks was extended to Mr. Willets for his presentation.

At the close of the meeting Val Friedrich, chairman of the Miami Valley Division of the Superintendents Association extended a cordial invitation to TAPPI members to attend the next meeting of their division, November 14, Manchester Hotel, Middletown, O. H. G. Specht of the Eastwood-Neally Company will give an illustrated talk on Fourdrinier Wires.

Those in Attendance

Among those present were the following:

Myron Wittmer, Cheney Pulp and Paper Company, Franklin, Ohio; Edward Lum, John North, both of the Beckett Paper Company, Hamilton, Ohio; P. E. Howard, Bevis Machine Company, Middletown, Ohio; L. B. Wells, H. M. Morris and Hugo Schapiro, from the Ohio Boxboard Company, Rittman, Ohio; C. D. Roess and Thomas Duff, Wrenn Paper Company, Middletown, Ohio; W. R. Willets and P. H. Cathcart, Titanium Pigment Company, Brooklyn, N. Y.; Vincent Waters, T. M. Chemerys, R. H. Maggart, Marvin Wynn and G. C. Munro, Champion Paper and Fibre Company, Hamilton, Ohio; H. H. Harrison, Crystal Tissue Company, Middletown, Ohio; H. W. Laymon, H. H. Wheeland, George Fromm, H. F. Waltz and M. L. Downs, Mead Corporation, Chillicothe, Ohio; R. R. Weber, Mathieson Alkali Works, Inc., Cincinnati, Ohio; M. L. Barker, Val Friedrich, Jr., Wm. Reigers and Wm. Beckett, Beckett Paper Company, Hamilton, Ohio; Harry E. Hadley, John Ditmyer and Wm. Boast, Gardner Richardson Company, Middletown, Ohio; Thage Dahlgren, C. R. Merriman, R. Holmes and W. A. Oliver, Gardner Richardson Company, Lockland, Ohio; R. B. Lueg, National Aniline and Chemical Company, Chicago, Ill.; Edw. A. Bush, Hooker Electrochemical Company, Hamilton, Ohio; A. J. Wildman, Champion Paper and Fibre Company, Hamilton, Ohio, and R. S. Conrow, Armco International Corporation.

Delaware Valley TAPPI to Meet

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry will hold its first meeting of the Fall Season, at the Engineers Club in Philadelphia, on Friday, October 30. The usual section dinner at 6:30 will precede the regular meeting at 8 o'clock.

The program of the evening will be devoted to a discussion of the manufacturing practices that are followed in producing book and writing papers to meet the specific requirements of the user for high quality material.

Hugo Hanson, President of W. C. Hamilton & Sons, will present the subject from the standpoint of writing and bond papers. His many years of experience and the high esteem in which his fellow members in Philadelphia hold him, will create special interest in this feature of the program.

W. R. Maull, vice president of Dill & Collins, Inc., and vice president of the National TAPPI organization will discuss the subject matter from the point of view of printing papers.

Union Bag & Timber To Incorporate

SAVANNAH, Ga., October 19, 1936—Petition for incorporation as the Union Bag and Timber Company of Georgia, with an already paid-in capital stock of $50,000 and the right to increase it to $500,000 was filed by R. A. Stuart, B. B. Kehoe and J. M. Brennan in Superior Court recently. All possible corporate rights asked.

Belief that the prospective corporation would function as a subsidiary or agent of the Union Bag and Paper Corporation in handling timber land holdings was not lessened because the law firm which counsels the existing corporation, Abrahams, Bouhan, Atkinson & Lawrence, represents the petitioners seeking the new charter.

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bidders is the following important statement relative to the Walsh-Healey act provisions:

WALSH-HEALY ACT.—Pursuant to Sec. 4 of the act entitled "An Act to provide conditions for the purchase of supplies and the making of contracts by the United States, and for other purposes," approved June 30, 1936 (Pub. No. 846, 74th Cong.) the following "Representations and stipulations" are hereby made a part of this contract:

Representations and Stipulations Pursuant to Public Act No. 846, Seventy-Fourth Congress

(*a*) The contractor is the manufacturer of or a regular dealer in the materials, supplies, articles, or equipment to be manufactured or used in the performance of the contract.

(*b*) All persons employed by the contractor in the manufacture or furnishing of the materials, supplies, articles, or equipment used in the performance of the contract will be paid, without subsequent deduction or rebate on any account, not less than the minimum wages as determined by the Secretary of Labor to be the prevailing minimum wages for persons employed on similar work or in the particular or similar industries or groups of industries currently operated in the locality in which the materials, supplies, articles, or equipment are to be manufactured or furnished under the contract: *Provided, however*, That this stipulation with respect to minimum wages shall apply only to purchases or contracts relating to such industries as have been the subject matter of a determination by the Secretary of Labor.

(*c*) No person employed by the contractor in the manufacture or furnishing of the materials, supplies, articles, or equipment used in the performance of the contract shall be permitted to work in excess of 8 hours in any 1 day or in excess of 40 hours in any 1 week, unless such person is paid such applicable overtime rate as has been set by the Secretary of Labor.

(d) No male person under 16 years of age and no female person under 18 years of age and no convict labor will be employed by the contractor in the manufacture or production or furnishing of any of the materials, supplies, articles, or equipment included in the contract.

(*e*) No part of the contract will be performed nor will any of the materials, supplies, articles, or equipment to be manufactured or furnished under said contract be manufactured or fabricated in any plants, factories, buildings, or surroundings or under working conditions which are insanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of the contract. Compliance with the safety, sanitary, and factory inspection laws of the State in which the work or part thereof is to be performed shall be prima-facie evidence of compliance with this subsection.

(*f*) Any breach or violation of any of the foregoing representations and stipulations shall render the party responsible therefor liable to the United States of America for liquidated damages, in addition to damages for any other breach of the contract, in the sum of $10 per day for each male person under 16 years of age or each female person under 18 years of age, or each convict laborer knowingly employed in the performance of the contract, and a sum equal to the amount of any deductions, rebates, refunds, or underpayment of wages due to any employee engaged in the performance of the contract; and, in addition, the agency of the United States entering into the contract shall have the right to cancel same and to make open-market purchases or enter into other contracts for the completion of the original contract, charging any additional cost to the original contractor. Any sums of money due to the United States of America by reason of any violation of any of the representations and stipulations of the contracts as set forth herein may be withheld from any amounts due on the contract or may be recovered in a suit brought in the name of the United States of America by the Attorney General thereof. All sums withheld or recovered as deductions, rebates, refunds, or underpayments of wages shall be held in a special deposit account and shall be paid, on order of the Secretary of Labor, directly to the employees who have been paid less than minimum rates of pay as set forth in such contracts and on whose account such sums were withheld or recovered: *Provided*, That no claims by employees for such payments shall be entertained unless made within 1 year from the date of actual notice to the contractor of the withholding or recovery of such sums by the United States of America.

(*g*) The contractor shall post a copy of the stipulations in a prominent and readily accessible place at the site of the contract work and shall keep such employment records as are required in the Regulations under the act available for inspection by authorized representatives of the Secretary of Labor.

(*h*) The foregoing stipulations shall be deemed inoperative if this contract is for a definite amount not in excess of $10,000.

Paper Men on Federation Committee

Formation of a committee to enlist the cooperation of paper manufacturers and merchants in the 1936 fund-raising campaign of the Federation for the Support of Jewish Philanthropic Societies of New York City was announced today by Jacob E. Schorsch, of Schorsch & Co., chairman of the Paper Division of Federation.

The committtee includes 20 of the leading members of the industry. Each has pledged substantially to increase his contributions to Federation, and to attempt to induce his friends and co-workers to do the same.

The campaign, which begins next month, has as its goal the raising of almost $3,000,000 to meet Federation's deficit for 1936. Paul Felix Warburg, vice-president of Federation, addressing the committee at its organization meeting in the Metropolis Club, 105 West 57th Street, declared that "getting this sum is a terrific job and we need your help. You've always helped in the past," he said, "but this year Federation needs your help more than ever before since the deficit of Federation's 91 charities is greater than ever before."

Among the members of the committee are: Emanuel I. Schorsch, of Schorsch & Co.; Charles Ballin of Gilman Paper Company.; I. Zucker of Oneida Paper Products Inc.; Jacob M. Rubinstein of American Paper Products Company; Al Newman of Newman Kohn Paper Company, Inc.; Isaac Gilman of Gilman Paper Company; Henry Kurniker of Schorsch & Co.; Meyer Schwartz of Harlem Paper Products Company; Morris Gintzler of Pulp Paper Trading Company; Maurice London of Lagerloef Trading Company; Max Weill of Mutual Paper Company; Sol Ash of Ash Trading Corporation; William Salzman of Brooklyn Standard Bag Company, Inc.; Alfred Bleyer of Alfred Bleyer & Co.; and Herman L. Rosenberg of Metropolitan Paper and Bag Company.

The de la Roza Continuous Digester

It is a well established fact that any product can be manufactured cheaper and better in a continuous machine, than it can be made in batches. All paper is made continuously, but until now all chemical pulp had to be made in batches. The continuous paper machine was invented many years ago and it lowered the cost and improved the quality of paper so much, that in a very short time all paper was made continuously, and no one today would think of trying to make paper in batches. Many attempts had been made in the past to invent a continuous pulp digester, so that, like paper, pulp could be made continuously instead of in batches, but the problem remained unsolved until the de la Roza Continuous Digester was invented.

The invention of the de la Roza Continuous Digester will now do for the chemical pulp industry what the invention of the continuous paper machine did for the paper industry. The de la Roza Continuous Digester, in rigid tests, lowers the cost and improves the quality and uniformity of pulp so much, that very soon all pulp will be made continuously, just as all paper is now made continuously. The de la Roza Continuous Digester is the result of many years of development work with the direct expenditure of more than seven hundred thousand dollars.

Several large machines, up to the 50 ton Standard Unit shown and described herewith, have been built and operated, and many hundreds of tons of pulp have been made to date in de la Roza Continuous Digesters, so that the machine is thoroughly perfected. The modern new pulp mills that will be equipped with de la Roza Continuous Digesters will represent the best and most modern engineering design and practice and will manufacture a far better, more uniform and cheaper pulp.

A Versatile Machine

The de la Roza Continuous Digester is a versatile machine developed for the production of any kind of chemical or semi-chemical pulp continuously from any suitable material containing cellulose, (as for instance wood, cotton linters, sugar cane bagasse, bamboo, straw, cornstalks, etc.) by any process whatever, (as for instance the sulphite, sulphate, soda, or any other chemical process including the de la Roza process). The de la Roza Continuous Digester is fully covered by basic patents in the United States and foreign countries. The patents cover not only the basic principles of the digester but also all of its important new improvements in pulp making. The de la Roza Continuous Digester is a very simple piece of equipment as can be seen from the drawings and photographs shown herewith. It consists of an impregnating feeder, press, a long horizontal rotating digester, two pulp presses, and heating, measuring, recording and controlling auxiliary equipment. With materials such as wood, that vary widely in moisture content, a moisture equalizing press (not shown in the drawing) must be used.

Complete Pulp Digesting Plant

The de la Roza Continuous Digester is a complete pulp digesting plant in itself, requiring no building in the warmer climates, and only a very inexpensive one story building in the colder regions. Its operation is also very simple. Wood chips, cotton linters, bagasse, bamboo, straw, cornstalks, or any other suitable material and chemical is fed in continuously at one end, and uniformly well cooked pulp comes out continuously at the other end. When using wood, the wood chips are obtained from a small bin on the ground, fed continuously from the chippers and screens, and are reduced to constant moisture in the first press.

When Using Bagasse

When using bagasse, the bagasse is obtained continuously from the conveyor at the end of the sugar mill without need for any further preparation. When using other materials, such as bamboo, straw, cornstalks, etc., these materials will have to be suitably prepared before being fed into the continuous digester.

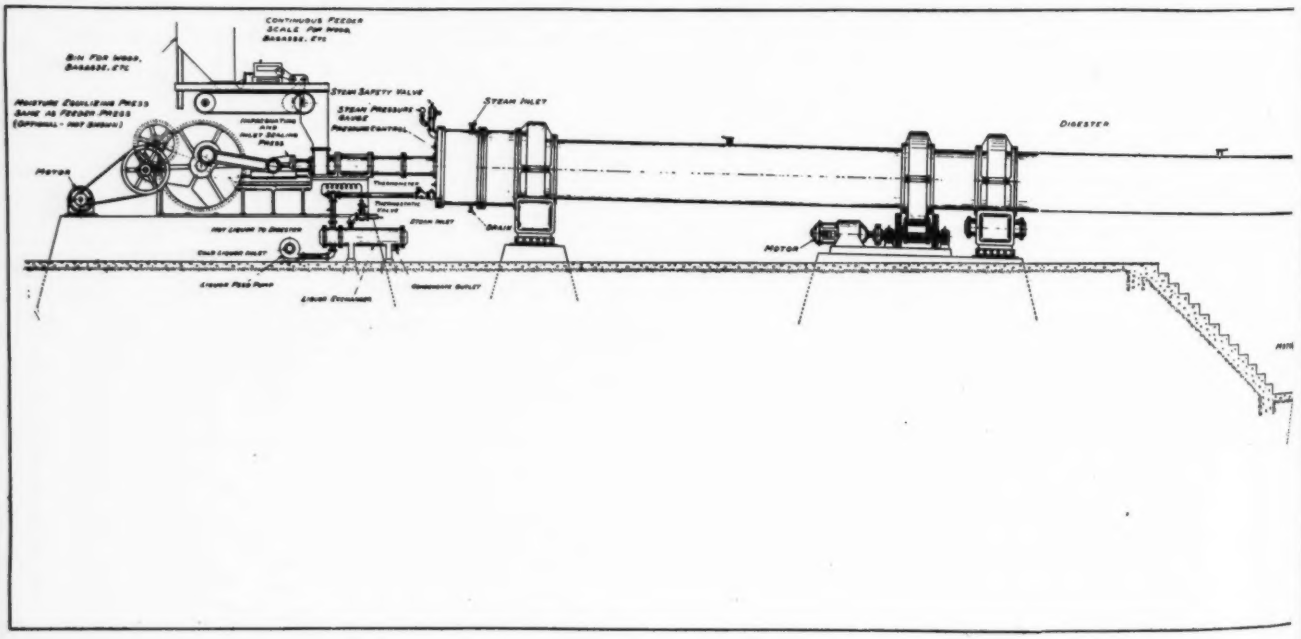


DIAGRAM OF THE NEW DE LA ROZA

The wood, bagasse, or other material with constant moisture is fed at constant weight by a continuous weight feeder to the second press, where it is impregnated with cooking liquor and forced into a tight plug or cork of impregnated chips or other material, through a long nozzle, into the long horizontal rotating jacketed digester. Additional cooking liquor required to make up the total liquor is pumped through a heater and through a separate nozzle into the long horizontal jacketed digester. The tight plugs or corks break up as they enter the digester and mix with the fresh cooking liquor that is forced into the digester through the other nozzle and the material is digested as it moves from the inlet to the outlet end of the digester. The digested pulp passes out of the digester into the first pulp press where the spent liquor is recovered by direct pressure, (no screws or worms) to have its heat and chemical removed, is repulped, and wash liquor added, and passes on through the second press where the first wash liquor is removed also by direct pressure to have its heat and chemical also recovered.

The pulp passing out of the second press will contain less than fifty per cent of its total weight as water and may be transported or stored in solid plugs without further repulping or diluting, if so desired. If the pulp is to be used immediately, it is repulped, and conveyed to a large tank where it is mixed with water and subsequently pumped through the various other steps of pulp making, depending upon the material and process used.

A Rugged Piece of Equipment

The de la Roza Continuous Digester is a rugged piece of equipment, intended to earn profits from the more efficient continuous manufacture of pulp, rather than out of the manufacture of the machines themselves, and therefore no effort or expense has been spared to obtain the best in design, materials and workmanship that will insure continuous, efficient and profitable operation free from any irregularities or breakdowns. The machines are being manufactured in shops possessing the best facilities and highly trained personnel competent to produce this type of heavy equipment.

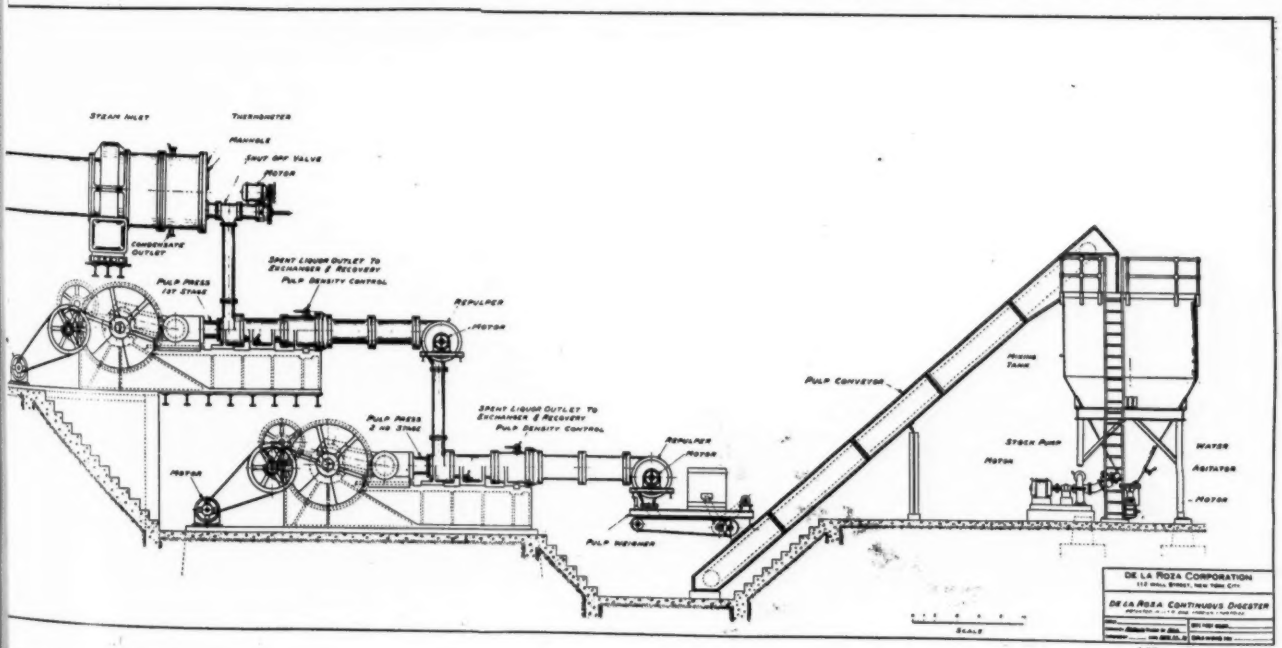
The moisture equalizing press is designed for a maximum direct pressure of five thousand pounds per square inch and is of very heavy cast steel construction, with continuously lubricated large bearings, large shafts, heavy cut steel gears and cast iron piston and slides. It has ample capacity, operating very slowly and requiring only about twenty-five horsepower. The moisture equalizing press may be omitted with material such as freshly milled sugar cane bagasse, which has constant moisture as produced. The action of the moisture equalizing press is simple—if the chips or other material is not thoroughly wet, hot water is added with it as it is fed into the press. If the chips or other material is very wet, the excess water will be extracted by the press. The length of the nozzle determines the friction of the pressed plug on its inside walls and this frictional resistance is constant and counteracts the pressure of the plunger, the excess of water being removed by the direct pressure of the piston.

Continuous Belt Type Feeder Scale

The feeder scale is of the continuous belt type, allowing only a predetermined weight of chips or other material to be fed into the digester in a given time. The scale is made to register separately bone dry weight of wood chips and moisture content, from which the cooking liquor can be determined, and the flow meter and liquor feed adjusted exactly to any desired liquor ratio and quantity of chemical, water and bone dry chips or other material.

The impregnating press is a duplicate of the moisture equalizing press, but instead of water a predetermined quantity of cooking liquor of known analysis is fed to the hopper with the chips. The cooking liquor is diluted in a definite and constant proportion by the uniform water contents in the chips and the quantity of base and other chemicals added to the chips can be easily regulated.

The chips or other material is impregnated thoroughly, preferably with a chemical containing a base, at a pressure up to five thousand pounds per square inch and is forced into the form of a continuous series of tight and dense plugs or corks which are pushed against the friction of the inside walls of the nozzle and the internal pressure in the digester, into the digester, and act as a seal against the



ROZA CONTINUOUS DIGESTER

escape of the contents of the digester that are under pressure. The action of the impregnating press is very thorough—in the case of wood chips even the knots being impregnated with a base. It is a proven fact that any pulp making material that is thoroughly impregnated with a chemical containing a base and immediately digested, can not burn while being digested even at maximum digesting temperatures. This thorough impregnation of the chips or other material with cooking liquor containing a base, prior to its being introduced into the digester to be immediately digested results in an increased yield of stronger, better, and more uniform pulp. In the de la Roza Continuous Digester all pulp is properly and uniformly cooked regardless of the material or the process that is used.

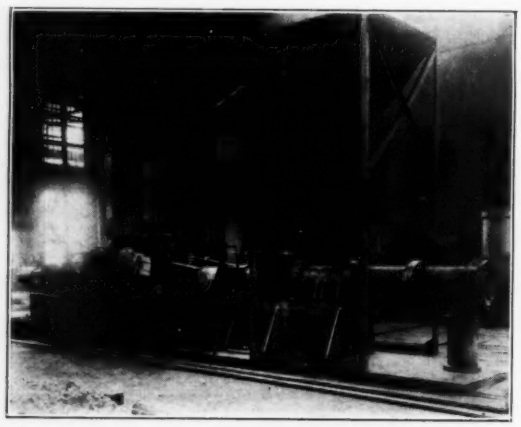
The sealing plugs or corks made up of the impregnated chips or other material to be digested are fed continuously into the digester by the action of the reciprocating plunger of the press and once inside of the digester fall apart and mix thoroughly with the hot cooking liquor entering the digester through a separate nozzle.

Heretofore digesters could not be charged efficiently with more than two and a half to three pounds per cubic foot (bone dry basis) of such bulky materials as sugar cane bagasse, cornstalks, etc., as against seven and a half to eight pounds per cubic foot (bone dry basis) that digesters can be rapidly charged with wood chips, and this has been by far the most important single factor that has heretofore prevented the profitable manufacture of pulp from such bulky materials as sugar cane bagasse—the world's cheapest source of cellulose.

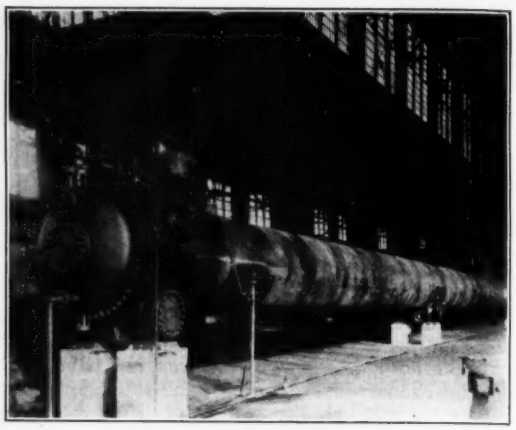
Will Charge to Any Number of Pounds Desired

The de la Roza Continuous Digester will charge any material—(whether wood chips, sugar cane bagasse, cornstalks, bamboo, straw or any other pulp making material) up to any number of pounds per cubic foot desired. The limit is set by the amount of water and chemicals required to cook the materials. Up to eighteen to twenty pounds per cubic foot (bone dry basis) of digester space can be charged and digested perfectly in the de la Roza Continuous Digester when producing kraft, bagasse pulp, cornstalk pulp, or similar pulps that require very low liquor ratios.

If the impregnated chips do not carry sufficient chemical solution for proper digestion, additional chemical solution must be added separately to make up the proper total quantity of chemical and water required in the process. This additional chemical solution is measured in a flow meter and is pumped through a heater, where it is raised to digester temperature and is then forced into the digester through a separate nozzle.



IMPREGNATING AND FEEDER PRESS



ROTATING DIGESTER

The horizontal rotating digester consists of a very long shell of very small diameter, rotating on suitable rollers and bearings within a stationary housing shell. Steam is contained in the space between the rotating and the fixed shell, and a simple seal is provided to prevent escape of the heating steam which is at a higher pressure, into the rotating digester which is at a lower pressure and which would dilute the cooking liquor.

All shells are of very heavy boiler steel heavily welded. Tires are of heavy forged steel carefully machined. Rollers are of chilled cast steel supported on heavy shafts and oversize bearings. Castings are of the best close grained steel also carefully machined. The inside shell is of such small diameter that it is easily rotated by a small motor of very few horse power.

The very small diameter and very long length of the rotating shell of the digester insures a better transmission and circulation of heat from the jacket, with more uniform temperature and a more thorough mixing of the contents. The length of the digester determines the maximum cooking time for a given capacity of digester. There are no worms or other moving parts inside of the digester to injure the pulp and lower the quality.

Great Factor of Safety

The extremely small diameter of the rotating shell of the de la Roza Continuous Digester permits a factor of safety of more than twenty times the working pressure. The shut-off valve is of special non-clogging design, both electrically and manually operated.

The pulp presses are similar in design and construction to the two inlet presses. They are self-cleaning and non-clogging, and remove the spent chemical from the digested pulp by direct pressure, (no screws or worms) up to five thousand pounds per square inch, and are capable of pressing the pulp to as high as sixty pounds of bone dry pulp per hundred pounds of pressed pulp. The absence of screws or worms avoids fisheyes and other irregularities in the pulp. The pulp presses squeeze the spent chemicals from the cooked pulp at digester temperature, preventing the reprecipitation of coloring matters, and of ash containing substances, in the fibers, giving a whiter pulp with less bleach, (particularly important in the manufacture of pure cellulose for rayon and in the manufacture of bleached sulphate), avoiding rupturing of the cell walls by sudden releases of pressure as when blowing, giving a stronger pulp, and extracting the spent cooking liquor from the pulp without dilution and without loss of heat, increasing the recovery of the chemicals and of heat. The chemicals are recovered in the usual manner although smaller equipment and less fuel is required because of the greater con-

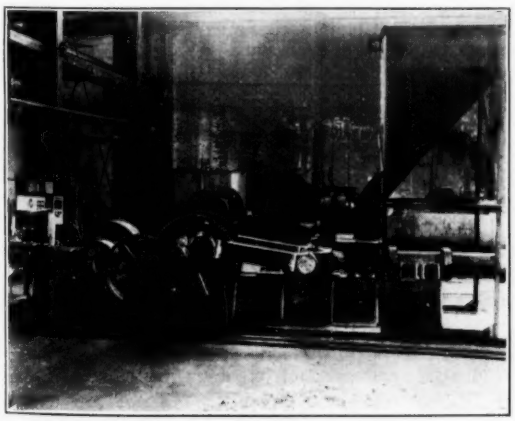
centration of the spent liquors. The heat in the spent liquors is recovered by passing them through exchangers, which heat the fresh cooking liquor and wash waters used by the digester.

The dense plugs or corks of freshly cooked pressed pulp act as a seal against escape of the contents of the digester and are pushed by the plunger through the outlet nozzle and density control into the repulper. The density control is a simple device, operated by the friction of the pressed plug of pulp against the walls of the outlet nozzle. The repulper is of the swing hammer type where no metal to metal contact is possible—the hammer and pins breaking up the pulp so thoroughly that it readily absorbs and mixes with the wash liquor being added to it at that stage of the process. The repulper is of very heavy construction to conform with the construction of the rest of the digester and is driven directly by a small electric motor.

Second Press is Duplicate of First

The second pulp press is an exact duplicate of the first pulp press. Wash water is added to the pulp instead of dilute wash liquor. More than two of these high density pulp presses can be used in special instances and they can be operated counter-current if desired. For the alkaline processes ferrous metals are used in the construction of the digester. For the acid processes all parts coming in contact with acid are protected by proper resistant alloys. The de la Roza Continuous Digester is carefully insulated throughout to minimize heat radiation. All heat is recovered in exchangers, so that the cost of fuel in a de la Roza Continuous Digester is minimized. Since all quantities of materials and all cooking conditions are accurately set, maintained and controlled, there is no guesswork necessary.

The actual weight of bone dry wood chips or other material is accurately determined and regulated by the moisture equalizing press and the feeder scales. There is no need to guess at the actual bone dry weight of wood charged into the digester. A definite weight of material per minute (bone dry basis) is fed accurately and continuously to the digester. The quantity of chemical is determined by analysis and is measured and regulated by flow meters. There is no need to read tell-tale scales on tanks nor to add excess liquor to make certain that the pulp is well cooked. Reblows are completely eliminated. A definite weight of chemical per minute is fed accurately and continuously to the digester. The quantity of water is determined and regulated partly with the determination and regulation of the moisture in the chips or other material, and partly as water added separately and measured by a separate flow meter. The total amount of water is thus readily determined and regulated by flow meters. A definite weight of water per minute is fed accurately and continuously to the digester.



PULP PRESS

Temperature Accurately Maintained

The temperature in the digester is accurately maintained constant by thermostatically controlled steam valves operating on the steam inlets to the jacket. Any temperature rise desired may be obtained and readily maintained. The perfect transmission and circulation of heat through a digester of such a small diameter while its contents are rotating and moving forward surrounded by the steam in the jacket, insures perfect uniform cooking of the pulp, without dilution with steam condensate, or under- or over-cooking. A definite temperature is set and accurately maintained throughout the contents of the digester. The cooking time is determined and regulated by the length of time required for the pulp to travel from the inlet to the outlet of the long rotating digesting shell. Any length of cook decided upon may be obtained and readily maintained. A definite cooking time is set and accurately maintained for the material passing through the digester.

Thus, with the de la Roza Continuous Digester, the five necessary factors required in the manufacture of chemical pulp, namely, the quantity of cellulose containing material, chemical, and water, and the temperature and time, are all accurately under control.

Lower Cost of Production

The advantages of extremely accurate control of all the factors required for the digestion of pulp, added to the advantages obtained by continuous perfect impregnation of the chips with chemicals before cooking, continuous perfect mixing, heating and circulating of the digester contents while cooking, and continuous high density, high temperature removal of the spent liquors and heat recovery, and washing of the pulp after cooking, obtained with the continuous digester, result in the production of a far better quality of more uniform pulp.

How much cheaper such higher quality of more uniform pulp can be obtained with the de la Roza Continuous Digester will, of course, depend upon the location of the pulp mill and the material and process used to produce chemical pulp, and will affect the savings of wood or other material, chemicals, power, labor, freight, etc.

For instance, several expert pulp cost accountants, after very careful study, have estimated that manufacturers of pulp in the middle-west of the United States can produce a superior quality of chemical pulp with the de la Roza Continuous Digester at a saving of $9.00 per air dry ton.

Aldine Will Move Into Larger Quarters

Aldine Paper Company, New York City, is moving to new quarters on November 2, at 373 Fourth avenue. Due to increased business which Aldine has been enjoying during the past two years and the addition of many new lines, the company has outgrown its quarters at 333 Hudson street.

"The new offices and warehousing facilities", states Mr. Gould, president, "will give us about four times the floor space we have at present. The new quarters will be more centrally located, so that we will be in a better position to serve our customers".

Aldine Paper Company are known as originators and creators of the most comprehensive line of distinctive and unusual papers in the United States. The company sells many of their exclusive papers from coast to coast, through distributors in various cities.

Premiers Discuss Canadian Newsprint

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., October 19, 1936—Co-ordination of the policies of the provinces of Quebec and Ontario in the matter of bettering conditions in the newsprint industry was decided upon here on Saturday at a conference between Premier Duplessis of Quebec and Premier Hepburn of Ontario. The conference lasted for several hours, and at the conclusion it was announced that the two provinces would co-ordinate the entire administration of their lands and forests departments. While no details were given in the official statement, it is known that the governments of both provinces have been much concerned at the competition in pulp and paper products which have kept prices at an unremunerative basis, and that they have been anxious to promote better conditions and wages for lumberjacks. Other matters engaging their attention have been forest conservation and the question of government revenue, since most of the wood cut in the two provinces comes from Crown lands.

There is no suggestion that, under the co-ordination of policies decided upon, any attempt will be made to fix prices for newsprint, but the fact that an agreement has been reached gives added significance to the provisions lately put into force by the Quebec government whereby upward revisions have been made in the stumpage fees on pulpwood and minimum wages of $40 per month fixed for men employed in woods operations. Equally important is the policy recently announced by Premier Duplessis whereby no more pulp or paper plants will be allowed to be established in Quebec until all the present idle or partly idle existing plants are employed.

Presumably these policies will now prevail in Ontario, while as regards New Brunswick that province usually falls in line with agreements reached by Ontario and Quebec in forestry matters.

At Saturday's conference the Ministers of Lands and Forests for the two provinces, namely the Hon. Oscar Drouin, for Quebec, and the Hon. Peter Heenan, for Ontario, were present, and they appeared highly gratified at the result.

It was intimated that the joint policy of the two provinces will be on constructive lines, with due consideration of the competitive conditions which Quebec producers have to meet in the world markets. In this connection the growing market for Quebec newsprint in countries other than the United States was given consideration, and stress was also laid on the disturbed conditions in Europe which, it was said, are causing United States consumers to look with uncertainty on Scandinavian sources of supply and to regard Canada as a safer place for long-term commitments. These conditions will have their influence, and due care will be taken to ensure that nothing is done which might in any way be taken as an effort to exploit consumers.

Meanwhile the output of newsprint by Canadian mills continues to increase, the figures for September, at 269,782 tons, being 45,890 tons in excess of the output for September, 1935.

Will of W. F. Whiting Probated

HOLYOKE, Mass., October 20, 1936—The will of William F. Whiting, former United States Secretary of Commerce and head of the Whiting Paper Mills here, has been allowed by the Probate Court and the executors ordered to furnish bonds to the amount of $250,000. The estate goes to his widow, Mrs. Anna C. Whiting, his three sons, William, Edward C. and Fairfield Whiting, and his daughter, Mrs. Ruth Whiting Chapin of Springfield.

Paper Mill Superintendents Meet

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., October 19, 1936—More than 200 persons attended the fall convention of the Pennsylvania, New Jersey and Delaware Division of the American Pulp and Paper Mill Superintendents' Association at the Hotel Du Pont on Saturday last.

Officers of the division who were elected at the afternoon session are: John H. Brougham, of the Penn Fibreboard Corporation, York, Pa., chairman; Harry C. Busser, of the York Haven Paper Company, York Haven, Pa., vice-chairman; Oscar Stametts, of the Riegel Paper Company, Milford, N. J., second vice-chairman; Eibert E. Earhart, of the Continental Paper Company, Bogota, N. J., third vice-chairman; Mrs. Alice R. Dow, of Nutley, N. J., secretary-treasurer.

In the afternoon, John C. Diffenderfer, of the Papermakers' Chemical Company of Easton, Pa., spoke on "Pitch and Pitch Trouble," giving various remedies to eliminate pitch, as it makes some portions of the tree useless for paper production. Allen Hyer, of the Black and Clawson Company, of Hamilton, Ohio, spoke on "Paper Mill Machinery." The "Wonder World of Chemistry," a motion picture, was shown through the courtesy of the E. I. Du Pont de Nemours Company.

In the evening a dinner dance was given, with Joe Hodkins, editor of the *Paper Mill and Wood Pulp News*, acting as toastmaster.

Warren Bullock, manager of the Import Committee of the American Paper Industry, gave an address on "Reciprocal Trades as They Affect the Paper Industry of the United States."

P. S. Bennett, well-known Columbia star, was guest artist. George Madden and his Delawareans furnished music.

William S. Taylor Honored

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, October 19, 1936—Retirement of William S. Taylor, 65 years old, on pension by the Champion Paper and Fibre Company, Hamilton on Monday, October 12 was the signal for a celebration at the plant.

The termination of his work with the firm came after 40 years' association with the Champion family, he having become identified with the company in 1897. Upon his retirement he was foreman in the sorting room.

The Champion Company and all employees indicated their esteem and high regard in many ways. Possessing a disposition that endeared him to all, few workers in the mills probably number their friends legion as did Mr. Taylor.

The entire mill was shut down Thursday morning at 11:30 o'clock for a half-hour period while employees assembled in the sorting room as a surprise celebration on Mr. Taylor's 65th birthday.

Clarke Marion, vice-president and production manager, acted as spokesman for the Champion family in presenting him with a beautiful watch, a traveling bag and shaving outfit. He also received a large basket containing 65 roses.

And here was the surprise supreme for Mr. Taylor, a lover of Lady Nicotine, there were 317 pipes hidden in the basket. Each pipe contained the name of a girl in his department.

Mr. Taylor resides at 710 Cleveland avenue, Hamilton, where he anticipates passing many hours, replete with fond memories of Champion association and mill life.

May Amend Robinson-Patman Law

WASHINGTON, D. C., October 21 1936—There has been talk again about the Robinson-Patman law and it continues to be one of the important matters of conversation these days among Washington representatives of trade associations and industrialists.

One of the points that has caught their fancy is the proposed amendment to the act which has been prepared by Representative Patman and which would prevent manufacturers from owning retail outlets and prevent retailers from becoming manufacturers.

The proposed bill itself has just become available here and it is said that Mr. Patman intends to introduce it at the coming session of Congress. The bill is to further amend the Clayton Act in order to "further protect interstate commerce against restraints and monopolies." It proposes to amend the present act by adding after section 3 a new section as follows;

"Section 3½. (a) It is hereby declared that the enactment of this section is necessary in order to protect commerce from restraints and monopolies which result in certain cases where persons are concerned with both the manufacturing and retailing of articles or materials.

"(b) It shall be unlawful for any manufacturer or any affiliate of such manufacturer to directly or indirectly transport or cause to be transported, in commerce, any article or material produced by such manufacturer for sale or distribution at retail by such manufacturer or by an affiliate of such manufacturer.

"(c) For the purpose of this section—

"(1) The term 'person' means an individual, a corporation, a partnership, an association, a joint stock company, a business trust, or an organized group of any of the foregoing, whether or not incorporated.

"(2) The term 'manufacturer' means any person, other than an individual, engaged in the producing, manufacturing, processing, packing, refining, or preparation of articles or materials for sale or consumption.

"(3) A person shall be deemed to be an affiliate of a manufacturer if such person controls or is controlled by, or is under common control with, such manufacturer.

"(4) The exhibition of a motion picture, for a charge, shall be deemed to be a sale at retail.

"(5) A person shall be deemed to control another person if having over the latter (A) actual or legal control, whether direct or indirect, or (B) any direct or indirect power or influence (whether arising through direct or indirect ownership or control of stock or other capital, evidences or indebtedness, or physical properties or equipment, through contract, lease, or agency arrangements, through interlocking directorates or officers, or through any other means of circumstances) which can be used to affect, in any substantial manner, the policies or conduct of such other person affecting competitive relationships between persons engaged in the business of selling articles or materials at retail.

"Section 2. This act shall take effect three years after the date of its enactment."

Brown Co. Transfer Boston Office

BOSTON, Mass., October 19, 1936—The Boston office of the Brown Company is to be removed to Portland, Me., where all the New England sales will be handled. Eugene Hanson will continue to represent the company in the New England area. On and after October 26, John Boynton will continue to solicit the New England trade on Nibroc Towels. George MacDonald will remove to Portland to handle the details of New England orders and correspondence.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 21, 1936—The Government Printing Office has received the following bids for 10,000 sheets of gray photo mount board; W. D. Hess Paper Co., at $39.00 per M. sheets; George W. Millar Company, Inc., $38.00; Mathers-Lamm Paper Company, $36.59; M. S. Ginn & Company, $38.40 less 2 percent; Reese & Reese, Inc., $37.45; Whitaker Paper Company, $36.95; R. P. Andrews Paper Company, $38.40; Charles W. Speidel & Company, $39.33 less 2 percent; Hurlock Brothers Company, Inc., $38.42 less 2 percent; Milton Bradley Company, $36.95; Walker Goulard Plehn Company, Inc., $46.50 less 2 percent; Enterprise Paper Company, $44.49 less 1 percent; Gauss Paper Company, $38.05; J. R. Howarth Paper Company, $46.72 and $38.42; and Charles G. Stott & Company, Inc., $41.26.

For 14,841 pounds (51,000 sheets) of white sulphite index paper; Aetna Paper Company, at 6.07 cents per pound; Whitaker Paper Company, 5.91 cents; R. P. Andrews Paper Company, 6.01 cents; Barton, Duer & Koch Paper Company, 5.69 cents; and Mathers-Lamm Paper Company, 5.84 cents.

For 1,000,000 No. 2 light colored sulphate kraft envelopes, No. 32; Union Envelope Company, at 60 cents per M; and U. S. Envelope Company, 56 cents.

For 1,000,000 No. 2 same No. 40; Samule Cupples Envelope Company, at $1.30 per M; Union Envelope Company, 92 cents; and U. S. Envelope Company, 95 cents.

Eagle Lodge Protests Wage Cut

HOLYOKE, Mass., October 20, 1936—Eagle Lodge Papermakers formally entered a protest at their meeting Sunday against the new wage schedule of the Carew Manufacturing Company of South Hadley Falls effective Monday under which by agreement the employees took a 10 per cent cut in wages.

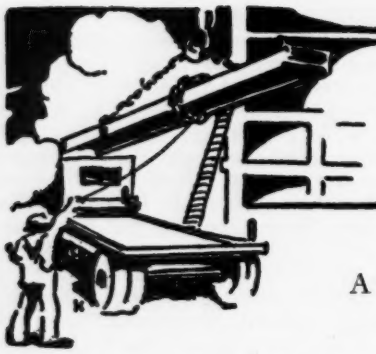
The Carew officials stated that this was agreed to by the employees; the Eagle lodge officials assert that the employed were coerced. Conferences to avoid the new schedule have been unavailing. The mill officials intimated that if the cut was not accepted the mill would be closed and the property liquidated.

Supreme Court Will Rule on Holyoke Case

WASHINGTON, D. C., October 19, 1936—The Holyoke Water Power Company of Holyoke won a point in the United States Supreme Court last week when that body granted its request for a review of the verdict of the Circuit Court of Appeals for the first district in the matter of rental payments to the Holyoke company for lease of water power. The case at issue, involving the famous so-called gold clause, involves rental payments from the American Writing Paper Company of Holyoke. The lower courts had held these payments could not be made in gold.

Fort Howard Opens Quaker City Office

PHILADELPHIA, Pa., October 19, 1936—Fort Howard Paper Company, of Green Bay, Wis., has just opened an office at 665 Drexel Building, with C. E. Hayes in charge. Mr. Hayes will cover Pennsylvania, Maryland, District of Columbia, New Jersey and Delaware. He will have associated with him, G. W. Kiskaddon. Distributors here in Philadelphia for Fort Howard Paper Company, manufacturers of toilet tissues, napkins, colored crepe papers, etc., are the Hooper Paper and Twine Company, Quaker City Paper Company and A. Goldman.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills.

Construction News

Syracuse, N. Y.—The Lowman Folding Box Corporation, 156 Solar street, manufacturer of folding paper boxes and containers, has approved plans for new one-story addition to plant, for which superstructure will be placed under way at once. It will be used primarily for storage and distributing service. Cost close to $40,000, with equipment. General erection contract has been let to the Universal Building Construction Corporation, 218 West Fayette street, Syracuse. Gustavus Young, 205 Davis street, Syracuse, is architect.

Chicago, Ill.—The Chicago Printed String Corporation has been chartered with capital of 100 shares of stock, no par value, to manufacture gummed paper tape, wrapping papers and kindred paper products. New company is headed by officials of the Chicago Printed String Company, 2320 West Logan boulevard, and will succeed to that organization. The incorporators include C. Weiner and Edward Graff.

Marietta, Ohio—The Celotex Corporation, 919 North Michigan boulevard, Chicago, Ill., manufacturer of building board products, insulating board and kindred products, has arranged for purchase of plant and business of the Calicel Company, Marietta, manufacturer of kindred insulating and acoustical products, and will consolidate with organization. The acquisition includes patents and other assets of the Calicel Company. Marietta plant will be continued in operation as heretofore under the new ownership. T. B. Monroe is president of purchasing company.

Lambertville, N. J.—The Almy Paper Company has been organized under New Jersey laws with capital of $100,000 by Walter A. Almy, Philadelphia, Pa., and associates, to operate the former local paper mill of the William Mann Paper Manufacturing Company, lately acquired by Mr. Almy, as previously noted in these columns. Remodeling and improving the plant, located on South Main street, have been in progress for several weeks, and production will begin at early date. The new company, it is understood, will specialize in manufacture of a line of special processed papers, including tarnish-proof paper stock. Mr. Almy will head new company.

Painesville, Ohio—The Industrial Rayon Corporation, West 98th street and Walford avenue, Cleveland, Ohio, manufacturer of viscose rayon products, has arranged for purchase of a tract of about 400 acres of land in Painesville Township, near Painesville, with frontage on Lake Erie, and will use as site for a new mill, for which plans will be completed in about 60 days. It will consist of main one-story units totaling over 300,000 square feet of floor space, with steam-operated electric power plant, machine shop, water filtration and softening plant, and other mechanical structures. Bids will be asked on general contract before the close of this year. New plant will cost about $7,000,000, with machinery, and is scheduled for completion late in 1937. Wilbur Watson & Associates, 4614 Prospect avenue, Cleveland, are architects and engineers. Hiram S. Rivitz is president.

Lee, Mass.—Smith Paper, Inc., manufacturer of wrapping papers, tissue and kindred paper stocks, has awarded general contract to Daniel O'Connell Sons, Inc., 450 Hampden street, Holyoke, Mass., for two new additions to mill, consisting of a one-story and basement unit, 140 x 160 feet, to be used for the machine department, and one-story building, 130 x 130 feet, for finishing division. Entire project is reported to cost over $125,000, and will be placed under way at once. R. A. Packard is company engineer in charge.

Circleville, Ohio—The Container Corporation of America, Inc., has plans nearing completion for new one-story addition to mill at Circleville, used for production of strawboard for corrugating service and allied specialties. Work is scheduled to begin soon. No estimate of cost has been announced. Main offices of company are at 111 West Washington street, Chicago, Ill.

Louisville, Ky.—Fire recently damaged a portion of plant of the Miller Paper Company, 118 East Main street. An official estimate of loss has not been announced. The damage will be replaced at early date.

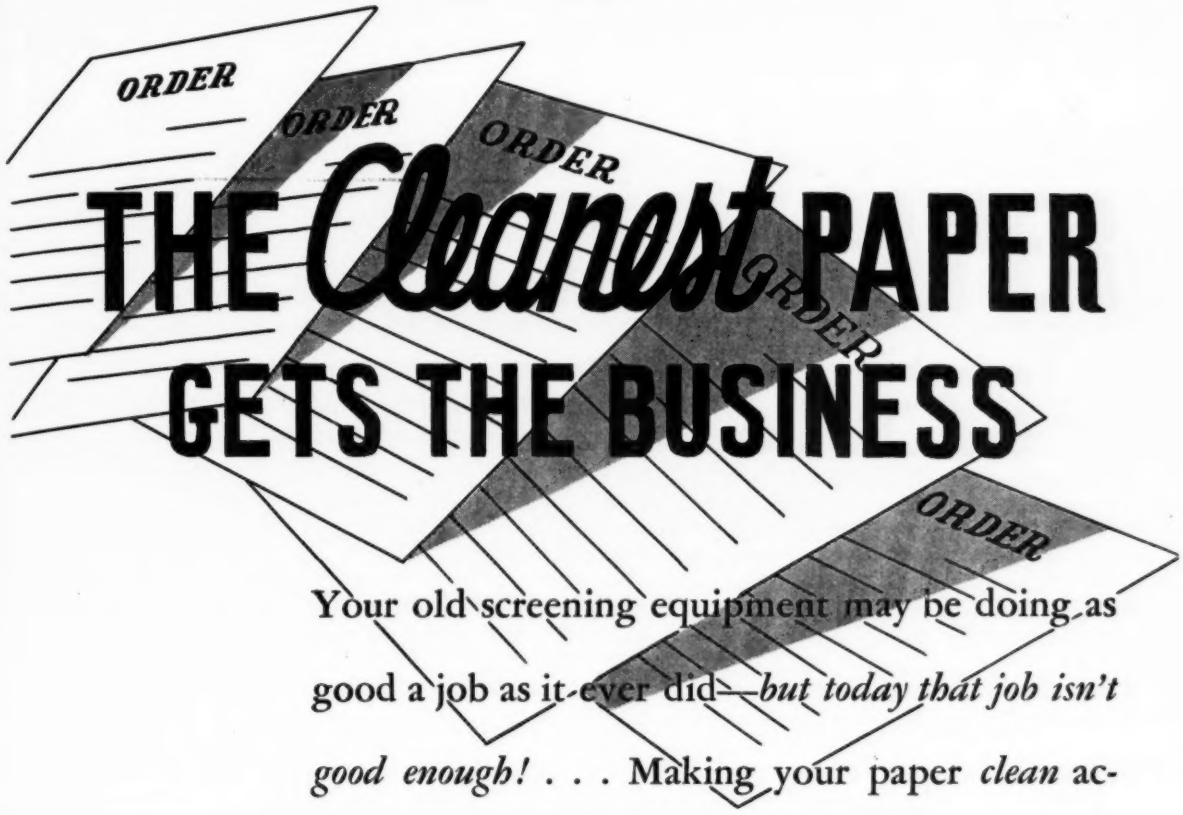
Toronto, Ont.—Staunton's, Ltd., 944 Yonge street, manufacturer of wallpaper stocks, has begun construction of proposed new mill at Vanderhoof and Brentwood streets, Leaside district, recently referred to in these columns. New mill will be of thoroughly modern type, two-story, 100 x 500 feet, estimated to cost in excess of $350,000, including equipment. The Carter-Halls-Aldinger Company, Ltd., 419 Cherry street, Toronto, is general contractor. Mathers & Haldenby, 96 Bloor avenue, West, Toronto, are architects.

New Companies

Trenton, N. J.—The Albert Dix Corporation has been incorporated with capital of 2500 shares of stock, no par value, to manufacture and deal in paper boxes and containers. New company will be headed by Albert Dix. It is represented by Alexander Budson, Broad Street Bank Building, Trenton, attorney.

Brooklyn, N. Y.—The Bly Carton Company, Inc., has been chartered with capital of $5,000, to manufacture and deal in paper boxes and containers. New company is represented by Rapaport Brothers, 17 East 42nd street, New York, attorneys.

Wilmington, Del.—The Garfield Paper Manufacturing Corporation, care of the Corporation Trust Company, Industrial Trust Building, Wilmington, has been chartered under Delaware laws, with capital of 100 shares of stock, no par value, to manufacture paper and fiber products.



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FUTURE MEETINGS

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway, Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

BUSINESS SOARS TO 1927-29 LEVEL

Business is back at predepression levels according to the index of business activity of the *Journal of Commerce*. For the first time since this publication began compiling its own index which is based on the three-year average 1927-1929, this index now stands over 100. For the week ended October 10 the index reached the preliminary figure of 100.3.

Progress during the year thus far says the *Journal* has been almost uninterrupted. At the beginning of the year the business index stood at 75.9. There was a slight recession in January, and a temporary leveling off during the summer months. However, immediately after Labor Day business activity regained its full stride and went ahead in leaps and bounds, registering new highs for four consecutive weeks since early September.

Business has now definitely passed the best level reached in 1930. The 1930 high of *The Journal of Commerce* business index was 98.6. Automotive activity and electric output already are far ahead of their 1930 highs while the other index components are quickly approaching their best levels of 1930, registered, of course, before the depression got under full swing.

Steel and lumber production still is lagging somewhat, reflecting the delayed recovery start in the heavy industries. Recently, however, the steel industry has made so rapid strides toward recovery that it can almost contest the automobile industry's claim for the title of "pacemaker of industry" for this year.

The recovery record since 1932 is impressive. *The Journal of Commerce* index touched its depression low on July 9, 1932, when it receded to 46.8. The individual components of the index reached their respective depression lows at various dates between January, 1932, in the case of merchandise car loadings, and March, 1933, in the case of automobile activity.

The present phase of our business recovery is vastly different from the three previous recovery starts which got under way in 1932, 1933 and 1934 but proved only short-lived. Not only has the upward movement now been sustained for over a year almost without interruption but it has for the first time extended to genuine recovery in the heavy industries.

Railroads are confronted with the possibility of an early shortage of freight cars if railroad traffic continues to improve at the present rate. Public utilities will soon have to provide a larger generating capacity if the use of electricity continues to reach new record highs with almost clock-like regularity. The steel industry already has started a vast expansion program because without the addition of new plant capacity it may soon be unable to keep step with the steadily growing steel demand. Building activity still is lagging considerably behind pre-depression levels. But here also private construction is now staging a comeback.

The present acceleration of business recovery is clearly reflected in a sharp rise in the consumption of basic commodities. Cotton consumption thus far this season is running 40 per cent ahead of last year. Rubber consumption for the first eight months of this year was 15 per cent larger than last year and will establish a new all-time record for 1936. Other industrial commodities for which monthly consumption figures are available, such as the metals and rayon, also are far ahead of last year. Even silk consumption, which had been lagging for the first six months of this year, has picked up during the past two months and exceeded the corresponding months of last year.

All components of *The Journal of Commerce* business index have advanced rapidly since Labor Day. Automotive activity stands out because it advanced from 119.4 back to 154.0 within four weeks, as soon as production of the new models got under way. Merchandise loadings advanced more than 10 points during the past month and similar impressive gains were registered by steel production and electric output.

TAPPI ANNUAL MEETING

The revival of business in the industry will be reflected in the annual meeting of the Technical Association of the Pulp and Paper Industry to be held at the Waldorf-Astoria Hotel, New York, N. Y., February 22-25, 1937.

Anyone desiring to present a paper at that meeting should notify the secretary, at 122 E. 42nd street, New York, at once. All manuscripts in triplicate must be in

the secretary's office not later than December 15, 1936.

In the sessions to be held the following fields are to be featured: Production Management, Acid Pulping, Mechanical Pulping, Alkaline Pulping, Stuff Preparation, Paper Manufacture, Heat and Power, Materials of Construction, Coating, Paper Bags, Containers, Graphic Art, Preparation of Non-Fibrous Materials, Testing of Paper, Pulp and Non-Fibrous Materials, Finishing of Paper, Personnel Management, Water and White Water.

Since this meeting held during Annual Paper Week, is the most important one held each year for the benefit of Managers, Engineers, Chemists and Superintendents, every mill in the industry should be represented by individuals holding these positions.

Awards Aldine Scholarship to I. A. Norgren

Irving A. Norgren has received the Aldine award for standing first in his class at the close of his Junior Year in the study of printing at the Carnegie Institute of Technology. The award, which is given annually to the Junior who has shown the most satisfactory development during the year, was created by Harry Gould, president of Aldine Paper Company, New York City.

Since establishment of the scholarship award the Aldine Paper Company received many letters of praise from paper manufacturers and others interested in the Graphic Arts. One of these letters is reproduced herewith and gives an idea of the great interest evinced by a large paper manufacturer in Aldine's progressive methods of creating a better understanding between paper and printing. Harry Gould of The Aldine Paper Company says that the gratifying response from the industry, has prompted him to consider the creation of additional scholarships at other institutions offering courses in printing.

The letter from L. H. Hulett, sales manager of the Chemical Paper Manufacturing Company, Holyoke, Mass., referred to above follows:—

"Dear Mr. Gould: I have just read in the PAPER TRADE JOURNAL of your establishing the "Aldine Award" for high scholastic standing in the study of printing at the Carnegie Institute.

This is a very fine thing to do and without doubt will prove a great incentive to young printing students and create in them not only an interest in the art of printing itself, but in the selection of the proper paper for the particular job."

Pacific TAPPI To Meet

The Pacific Section of the Technical Association of the Pulp and Paper Industry will hold its annual meeting at the Multnomah Hotel, Portland, Ore. on Friday and Saturday, November 6 and 7.

On Friday mill visits and golf constitute the program. On Saturday morning, Harry F. Lewis, Dean of the Institute of Paper Chemistry, Appleton, Wis., will talk. J. M. Martin of the General Dyestuff Company will discuss the "Application of Dyestuffs" and H. K. Benson of the University of Washington, Seattle, will talk on "Sulphite Waste Liquor as an Adhesive."

Saturday afternoon will be devoted to watching the University of Oregon play against the U. C. L. A. and in the evening there will be a dinner-dance.

Anyone in the paper or allied industries planning at any time to visit the Pacific Coast should notify R. G. Macdonald, 122 E. 42nd street, New York, so that arrangements can be made through the Pacific Section to have such visitors as guests at meetings.

Production Ratio Report

The statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Month	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.3%	70.0%	.....
May	81.6%	69.4%	.....
June	80.7%	72.3%	.....
July (b)	80.0%	67.8%	.....
August	81.5%	70.9%	.....
September (c)	84.0%	75.0%	59.4%
October	.....	75.6%	64.7%
November	.....	75.3%	61.7%
December (a)	.....	74.3%	62.1%
Year	.....	71.2%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*September 5	81.3%	September 7 (c)	76.6%
*September 12 (c)	85.8%	September 14	72.7%
*September 19	85.7%	September 21	76.1%
*September 26	84.0%	September 28	74.9%
*October 3	84.0%	October 5	75.2%
*October 10	86.9%	October 12	76.3%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks					
Ratio Limits	Sept. 5, 1936	Sept. 12, 1936	Sept. 19, 1936	Sept. 26, 1936	Oct. 3, 1936	Oct. 10, 1936
0% to 50%	83	80	66	64	61	38
51% to 100%	249	252	264	262	242	188
Total Mills Reporting	332	332	330	326	303	226

* Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours" were as follows:

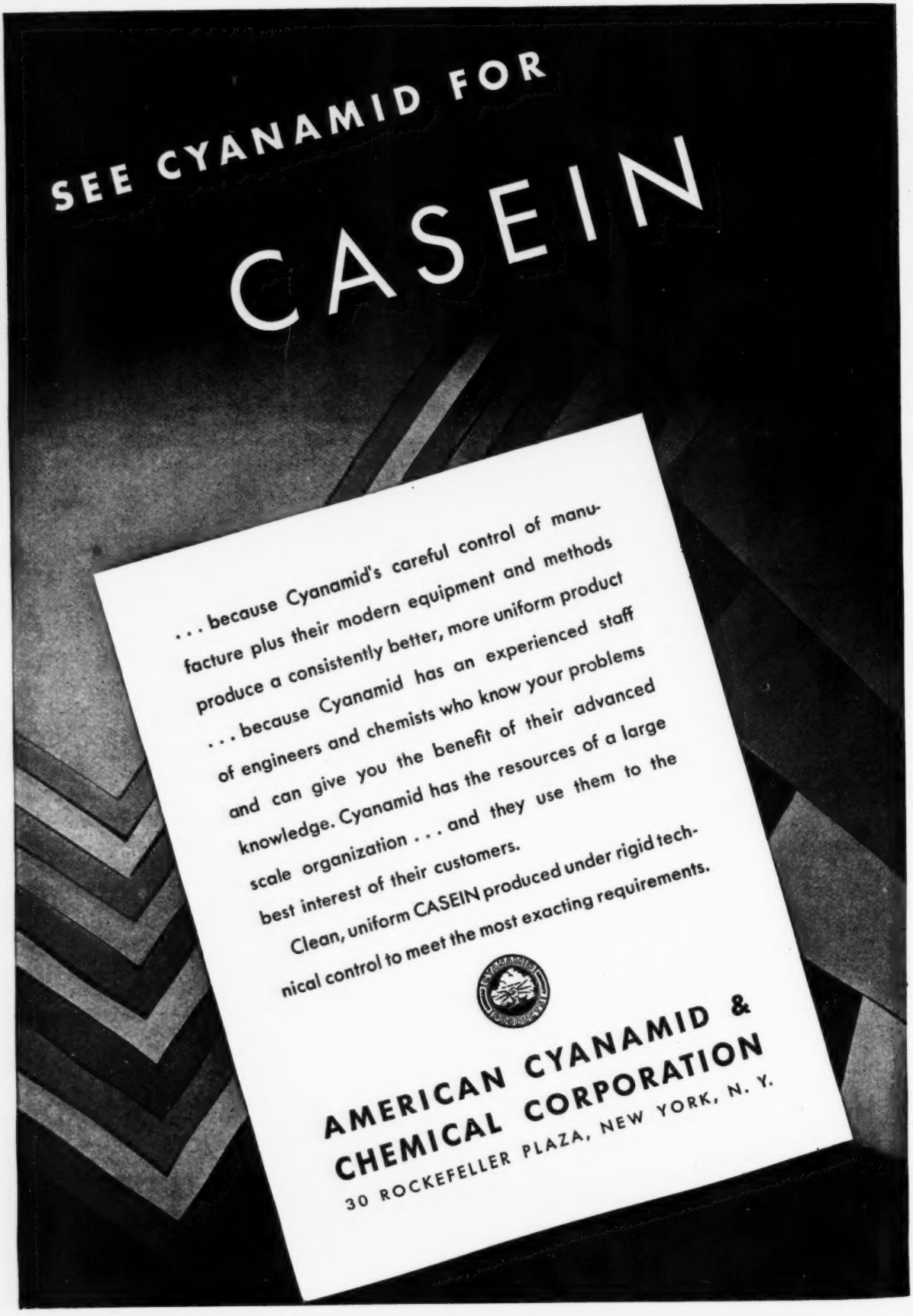
Month	1936	1935	1934	Month	1936	1935	1934
January	61%	61%	....	July	69%	59%	....
February	67%	67%	....	August	75%	65%	....
March	68%	67%	....	September	....	69%	62%
April	70%	61%	....	October	....	76%	63%
May	68%	61%	....	November	....	70%	56%
June	68%	65%	....	December	....	60%	(a)53%

Week ending Sept. 5, 1936—78%
Week ending Sept. 12, 1936—66%
Week ending Sept. 19, 1936—81%
Week ending Sept. 26, 1936—82%
Week ending Oct. 3, 1936—80%
Week ending Oct. 10, 1936—81%

Newsprint Production Increases

Production of newsprint in Canada during September 1936 amounted to 269,782 tons and shipments to 269,689 tons according to the Newsprint Service Bureau. Production in the United States was 72,216 tons and shipments 75,466 tons, making a total United States and Canadian news print production of 341,998 tons and shipments of 345,155 tons. During September, 28,329 tons of news print were made in Newfoundland, so that the total North American production for the month amounted to 370,327 tons. Total production in September 1935 was 323,855 tons.

The Canadian mills produced 323,988 tons more in the first nine months of 1936 than in the first nine months of 1935, which was an increase of sixteen and four tenths percent. The output in the United States was practically the same as for the first nine months of 1935, in Newfoundland production was 9,186 tons or three and seven tenths percent less, with no production in Mexico, making a net increase of 300,266 tons, or ten and three tenths percent. Stocks of news print paper at Canadian mills were reported at 65,989 tons at the end of September and 17,397 tons at United States mills making a combined total of 83,386 tons compared with 86,543 tons on August 31, 1936 and 90,193 tons on September 30, 1935.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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Water for the Paper Industry*

By A. E. Griffin[1]

The paper manufacturing industry is probably more dependent upon the adequacy and purity of its water supply than almost any other line of endeavor, with the possible exception of the textile trade. It is an industry where from 200 to 1000 times as much water as the weight of the finished stock are used, and one where dirty water will either impair the strength of the finished paper, make it dull or lifeless, or produce other deleterious effects. Furthermore, it is a type of industry wherein steady depletion of a once copious supply, of progressive pollution of an originally pure source, may easily mean drastic changes in production procedure or even the moving of the mill operations to another location.

Although it is quite possible that these factors might not have been thoroughly appreciated in the early days when paper manufacturers were first establishing their business, it is a fact that they did seek locations for their mills on streams of sufficient volume and purity, first to furnish power, and secondly to supply the needs of the manufacture of the paper itself. While it may be argued that the power factor is less important today than it was fifty years ago, there is little argument that the question of quality of water is becoming more important each year, due not only to the increasing pollution of our natural streams, but also to competitive. and increasing, demand for better quality papers.

Water Uses

Water is used in many ways in a paper mill, such as for power for cooling, washing either dirt or chemicals from stock, for conveying stock from one production unit to another, for mixing chemicals, for boiler makeup water, for drinking purposes, etc. These manifold duties do not all call for waters of equal purity. Naturally, it would be uneconomical to purify all of the water to a point where it could be utilized with safety for domestic consumption; i. e. to purify it to a degree where it would meet Public Health standards for portable waters. Likewise, it would not pay to soften all the water going through a mill to a point where it would be suitable for boiler use because, like the domestic supply, only a very small percentage would be used for this purpose.

In addition to the uses previously mentioned, water serves the mills as a means of transport. It is used to transport pulp wood logs in their travel from the woods to the mill; it is used to transport the stock through the mill; and whatever waste may escape from the mill is transported away from it by the same medium. Volume, not quality, is required in the streams for the transportation of the logs to the mill, while volume and purity are required within the mill. The stream below the mill must provide sufficient dilution to prevent the production of a nuisance. From an economic viewpoint it is wiser to restrict the waste going into the stream below the mill, so that it would be impossible to create a nuisance regardless of the amount of water in the receiving stream.

Process water in its broadest sense might be termed all the water used in paper making excluding that which is used either for boiler makeup water or for the domestic supply. It should, in general, be soft, free from suspended matter and low in color, iron, and dissolved salts. Although there is little need for it to equal drinking water standards from a bacteriological viewpoint, the bacteria content, particularly those of the slime forming type should not be excessive. It is probable that variations in hardness mean more than the actual degree of hardness itself in production of certain special types of papers.

The impurities normally present in water may be physical, chemical, or bacteriological in nature, none of which can be discussed entirely separately on account of their overlapping effects. In general, we might consider the physical impurities as referring to suspended or floating matter such as leaves, sticks, silt, etc. Chemical impurities might be industrial wastes, dissolved natural salts, iron, manganese, etc., while bacterial impurities would include the slime forming bacteria, bacteria causing decomposition, iron bacteria, moulds, etc.

Types of Water

There are two types of water—ground and surface. Ground water refers to that which is drawn from deep wells, while surface water is that normally found in streams, ponds, lakes, etc. Of the two, ground water is usually preferable on basis of clarity, although due to the necessity for pumping it will be the more expensive. This expense of pumping militates against its general use for paper manufacturing purposes except in special cases. As a compensation for this cost however, this type of water is usually cool and colorless and seldom contains excessive numbers of bacteria. Perhaps the most frequent impurities found in it are dissolved iron and other salts. These impurities interfere with the production of first grade paper, due for instance to the development of yellow color in white paper by iron or manganese, and the interference with the sizing of paper by the dissolved salts.

While there is no particular difficulty in eliminating iron from the majority of water, the treatment may be

* A talk given at the Provincial Paper School, Three Rivers, Que.
[1] Wallace & Tiernan Field Research Department.

costly, usually necessitating aeration, treatment with lime, settling and filtration, all of which require extra pumping. Iron may also be removed by passing the water through Zeolite filters, which may or may not necessitate additional pumpage. Either method requires a considerable expenditure of money both in operating charges and capital so that the use of such waters is avoided wherever possible.

Bacterial Pollution

The most usual type of bacterial pollution encountered in well waters are the so-called iron bacteria, which have the ability to withdraw iron from solution and precipitate it in their own cellular structure as ferric hydroxide. There are several types of iron bacteria, the most common of which are crenothrix and leptothrix. Paper pulp is an excellent medium for the growth of all iron bacteria so that when any of these enter the white water system they multiply rapidly, concentrating iron in their outer walls, eventually to produce iron stains in the finished stock. In addition to this effect, excessive accumulations will add to other slime growths, thereby hastening the necessity for periodic clean-ups, or treatment for elimination of the condition.

Straight coagulation and filtration will eliminate a large portion of such organisms, but unless some means of sterilization is used, some of the spores are almost sure to pass through the filter into the mill supply. Heavy pre-chlorination will kill a large percentage of such bacteria, spores, etc., before they reach the top of the filters, while the few that may pass through can be easily eliminated by chlorination of the clarified water. In those cases where the chlorine demand due to the presence of organic matter is excessive, the application of ammonia and chlorine will be more effective than chlorine alone.

Surface water is used in the greater percentage of paper mills. This type of water may vary widely in degree of purity. It may range all the way from a soft, clear and colorless type to one very hard and turbid. The best of surface waters will require screening for the removal of such large materials as leaves, bits of grass, floating sticks, etc., and for an otherwise colorless, clear water this treatment is usually sufficient for ordinary process purposes. Waters containing appreciable amounts of color and high turbidity require rather complete processing, including filtration. Turbidity may be due to suspended clay, organic matter, trade wastes, raw or partially clarified sewage or other foreign material of a similar nature. Algae is particularly troublesome in some waters. Many times it appears very unexpectedly, resulting in complete clogging of the filters, with resultant loss of water capacity required for manufacturing operations, unless the operator has been provided with facilities to cope with the situation.

Small amounts of algae seldom cause much trouble in the manufacture of paper, but when their numbers become excessive they are prone to collect either in the foam or on the sides of the head boxes. As these accumulations build up, the small particles periodically detach themselves and pass on to the screens or cylinders to form holes or specks in the finished paper. Trouble from this cause as indicated above may in many cases be eliminated by filtration. Where algae are so excessive in numbers that they clog the filter sand, chlorine or chloramines may be applied ahead of the settling basins. This procedure will aid in their removal prior to the actual filtration process. Pre-chlorination will also assist in the clarification of a water by conditioning it prior to the application of the coagulating chemicals. Chlorine also tends to preserve the sterility of the filters, thereby making it possible for them to perform at full efficiency at all times.

Impurities

Subsidence basins are always good protection on any water supply regardless of subsequent treatment, because much objectionable material will settle out in them. When sand or material of similar physical characteristics is allowed to enter the mill, it may tend to break down the wool fibres of the felts, causing reduction in useful life. Excessive quantities of foreign material may produce lumpy forms on the wire, eventually resulting in breaks. The presence of excessive mud may materially affect the strength of the paper. At least one case is on record where a light-weight unbleached Kraft showed a loss of almost 50% in strength due to use of muddy water.

It has already been mentioned that excessive iron is undesirable in good paper mill water due to its effect on the color of the finished stock. Dissolved color produces the same effect of causing dull finished stock, which has a tendency to turn yellow with age. Water containing such impurity may be used in the manufacture of the lower grades of paper where appearance is not a factor—such as wrapping paper, boxboard, corrugated stock, straw-board, etc. But where bonds, writing, tissues, etc. are manufactured the water must be free from color. Color may be readily removed by coagulation followed by filtration. Color removal is standard practice in the waterworks field where it is usually accomplished by mixing aluminum sulphate with the water, followed by coagulation and settling. The effluent from the settling tanks then goes to the filters whose efficiency depends considerably upon the amount of alum floc carried on to them. The majority of waters react very readily to this procedure. Certain waters, however, of high color, low pH type, including those containing organic iron, may require special handling, as was notably the case in the water supply of Amesbury, Mass., where iron was removed successfully for several years by normal coagulation and filtration. Then, suddenly, due to some change, iron began to come through the filters. Intensive investigation of this problem proved that the application of chlorine ahead of the other chemicals would rectify conditions. This was done and the plant is again operating at its former degree of efficiency.

Waters high in organic color usually require a low pH for optimum clarification. In the early days of water filtration it was often deemed necessary to add either lime or soda ash at some point near the application of the alum in order to bring about precipitation. It has now been found that the addition of these chemicals ahead of alum has a tendency to set the color, rendering its removal difficult in the filter plant, although probably leaving it in a condition capable of removal by the paper pulp.

Where it is desired to soften the water it may be done by either the soda-lime process or through use of Zeolite filters. The choice of method depends entirely on the economics of the individual requirements.

Bacteria

So far in this discussion we have talked about the delivery of clear, colorless water for use in the paper mill. The question of bacteria has been mentioned but not discussed to any great length. As indicated, bacteria are of several different types, those causing slime, those responsible for decomposition of cellulose, which withdrew iron from solution, etc. Of these various organisms probably the slime bacteria cause the most trouble and greatest economic waste. These organisms have the peculiar property of living on cellulose, building up gelatinous slime capsules around themselves, resulting in gelatinous accumulations, particularly in those parts of the system where

slow flows occur. When allowed to accumulate, these organisms grow on the cellulose which they apparently decompose, giving off during their metabolism carbonic, and evidently lactic acid. They produce pigments of practically all colors—blue, green, orange, yellow, red and dark brown colors have been noted. On drying these colors all revert to a smudgy dark hue.

The acid generated during the life cycles of these organisms may lower the pH to the point where growth is retarded, which has been found to be somewhere in the neighborhood of 4. When this stage is reached secondary mold growths are developed, with these growths apparently living on the accumulated products of metabolism of the slime organisms.

Slime organisms can always be traced to one or both of two sources—they can be found either entering the plant in the water supply or with the raw material. They have been found in practically every surface water supply regardless of climatic conditions all over the country. They have been found on the surface of logs and have been found growing in lapped pulp. They have also been found causing the decay of cellulose. Stumps and leaves are rotted by organisms of this group. Every rain brings countless number of them into the surface water supplies and thence through the intakes of the paper plant systems. They are found in great profusion in water polluted either by industrial wastes or sewage effluents.

While slime organisms may not be very abundant in the clear woodland streams, such waters usually contain enough of the capsules to act as seed once a favorable medium is encountered, such as paper stocks. Here water is about optimum temperature for their rapid reproduction and they soon create a nuisance, by causing rapid accumulation of slime in the mill system.

Permitting slime to accumulate in any mill system results in definite increase in production costs, or loss of quality of product, or both.

Where slime is allowed to develop to the point of breaking away in the stock lines or vats, to carry over with the sheet, the immediate effect on quality of the finished paper is at once evident. In numerous cases pin hole difficulties in finished papers can be traced to the same cause. Since it has already been shown that bacterial activity which results in slime is responsible for decomposition of stock and development of odors in the stock, it becomes apparent that the source of objectionable odors in finished products can be traced to the same slime forming source. The generation of acids by the slime formers, by reason of the variable nature of this action, has been shown to cause difficulty in obtaining uniform coloring and sizing in certain types of paper and board. In some mills it has been found that this same bacterial action promotes the production of iron tannates, causing discoloration of paper.

Production costs as well as quality of paper may suffer where bacterial activity is allowed to go on without some form of control. Decomposition will directly result in loss of stock and other paper materials in the mill system. Indirectly further losses will result due to the additional power necessary for reworking the stock and the lowered value of reworked stock returned to process as a result of slime breaks, or rejection of imperfect or unsalable papers.

Lack of slime control makes it difficult to take advantage of the savings which result from closed system operation which include lower power costs, lessened water consumption and reduction of stock losses to a minimum.

Other production losses which occur in those mills troubled by slime may be traced to inefficient water removal through slime clogged felts, which requires additional steam supply to the dryers. Clogged filters also place excessive mechanical strain on the felt fabric while actual decomposition of the wool fibers may seriously reduce the useful felt life.

The same effect is to some degree noted as a result of partial binding of wires.

The growth of slime on screens, in savealls and in piping throughout the mill interferes with efficient operation and results in power losses due to partial obstruction of the pipe lines and stock handling units.

It has already been seen that the bulk of the slime contamination of the mill enters with a polluted fresh water supply. A suitable chlorination or sterilization treatment of the entering fresh water can therefore eliminate this source of mill contamination. In those mills where contamination enters with the paper materials, definite means must be provided to assure proper control of this source of contamination. In the majority of mills it is found that the use of chloramine for treatment of the entering fresh water not only eliminates the fresh water as a major source of contamination but also by reason of its persistent action, retained in the paper system adequately takes care of the slime formers that may enter with the paper making materials or that may be permanently seeded in various portions of the paper system.

In certain types of mill systems it is found necessary to apply the treatment not only to the entering fresh water but also to the recirculated white water, where this is used to any great degree.

Each individual mill presents a separate problem which requires a detailed study to assure satisfactory selection of treatment in order that slime development may be kept under positive control.

Kalamazoo TAPPI Meets

The monthly meeting of the Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry was held at the Community House of the Kalamazoo Vegetable Parchment Company, Parchment, Mich., October 15, 1936.

C. M. Markle of E. I. du Pont de Nemours & Co., Chicago, gave a talk on "Dyestuffs in the Paper Industry." Mr. Markle stated that most of the inquiries received at their office are inquiries concerning the proper dyes to be used in matching a particular shade or color. His talk was based on this problem, giving the classes of dyestuffs and the characteristics of each class, the tests to be applied in determining the class used in sample to be matched: fastness test, acid and alkali, extraction text; the types of fading, matching of color in laboratory and mill. He concluded his talk with remarks on how to cut down mottling effect due to dyes.

Among those present were:

J. Wood, W. F. Hathaway, W. J. White, L. H. LaLibert, R. B. Stewart, T. Fishbeck, G. Swanders, R. H. Hurst, Hugh Smith, J. Bauman, W. Kottman, Harold Ball and F. Libby, all of Kalamazoo Vegetable Parchment Company; C. A. White, Ray Olson and M. Wilkens, Bryant Paper Company; G. T. Ingling, Kalamazoo Paper Company; W. T. Snyder, W. S. Taylor and V. Heinmuller, American Cyanamid & Chemical Corporation, Kalamazoo; W. H. Kirkpatrick, Allied Paper Mills, Kalamazoo; P. deGuchery, A. E. Hays, Ray Barton, G. C. Schmid and W. H. Astle, Michigan Paper Company, Plainwell, Mich.; F. D. Elliott and M. C. Jones, Michigan Carton Company, Battle Creek, Mich.; H. C. Bradford, Rex Paper Company, Kalamazoo; P. W. Bartholomew and E. Radant, Paper Makers Chemical Corporation, Kalamazoo; G. M. Markle, E. I. du Pont de Nemours & Co., Chicago, Ill.

Pitch and Pitch Troubles in Paper Making*

By L. E. FITZGERALD[1]

Pitch and the difficulties caused thereby has been a subject of much discussion between pulp mill men and paper mill men since the early years of paper-making. Numerous ways and means of treating pulp-wood, chips, pulp and paper stock have been suggested and tried in order to overcome these troubles, but even today there is still a wide difference in opinion regarding specific cures. This paper is not offered as an answer to this age old problem, but merely in an endeavor to point out and review some of the various theories as to the cause of pitch troubles and some of the more successful methods used in combating them in the hope that by so doing a general discussion can be promoted which will further develop the ideas mentioned or will bring out new thoughts which will be of mutual benefit to all concerned.

Since the major portion of pitch problems are experienced in the use of wood pulps, particularly ground-wood and sulphite, made from coniferous woods, let us just briefly review the theory as to the cause of these troubles beginning with the wood itself.

All coniferous woods contain a mixture of resins generally referred to as pitch. These resins are largely present in the resin ducts and the ray cells of the wood, the amount of resin contained depending upon the species of the wood and the freshness of it. The resin content of fresh spruce, for example, will average from 2.5 to 3.0 per cent, while that of fresh pine will sometimes run as high as 5 per cent. These resins are generally considered to largely consist of a mixture of fats and rosin in about equal proportions.

If wood is extracted, first with ether and then with alcohol, the ether extract will contain most of the fats, while the alcohol extract will contain the rosin acids together with the remaining fats. The fats can be removed from both of these extracts with petroleum ether. It is these fats that are generally conceded to be the underlying cause of pitch troubles as known by the paper-maker.

Effect of Seasoning

Aging of wood reduces the total amount of resins due to the oxidation and polymerization of both the natural rosin acids and the unsaturated fatty acids. Most authorities also agree that in seasoned woods the ether extractable or fats are lower and the alcohol extractable is higher in proportion to the total resins than in green wood. Experiments have shown that the solubility of spruce pitch in petroleum ether dropped from 93 per cent of the total for fresh pitch to 57 per cent after the pitch had been aged for about 3 weeks. The total alcohol extractable, however, was 100 per cent for the fresh pitch and 98 per cent after aging. In other words, seasoning of wood not only reduces the total resins, but greatly reduces the ether extractable portion, that portion which gives trouble in the paper machine.

Oxidation of resin during the seasoning of wood also changes their physical characteristics and they lose their tackiness. Thus they will not so readily agglomerate into larger particles which will be deposited later on in the processing of the pulp.

Storage of wood chips for a few weeks has been found equal in the elimination of pitch troubles, to aging of wood in logs for periods of 6 months to a year. This is due to the fact that chips will lose moisture faster and that oxidation of the resins will take place more readily.

Treatment of chips with warm air has also been found to speed up the oxidation process. Pine chips, for example, showed a decrease in ether extractable of 25 per cent after 6 hours' treatment and a decrease of 34 per cent after 26 hours' treatment. The figures for the decrease in the petroleum ether extractable or fat content were 44 per cent and 56 per cent respectively.

Since groundwood pulp contains practically all of the original wood, whereas in the sulphite process about one-half of the wood content is removed, while only a small portion of the resins are removed, the proportion of resins are much higher in a sulphite pulp than in mechanical pulp made from the same wood.

More Trouble With Sulphite

In the sulphate process or in the soda process the greater portion of the fats and the rosin acids are saponified forming soluble soaps, which are subsequently removed in the washing of the pulp. Hence, pitch troubles on these grades are rare compared to those experienced with groundwood and particularly with sulphite.

In sulphite pulp, the resins either remain enclosed in the unbroken ray cells, in which they originally existed in a large part, or are present in the form of a fine unstable emulsion which under the proper conditions of subsequent mill operation may break, depositing the resins in sticky masses at various points in the system. The deposition of these resins result in the so-called pitch troubles which present a very complex problem and one which is oftentimes of the utmost importance in a paper mill.

Since most of the resins occur inside of the ray cells it can cause no harm if these cells remain intact. Uniform penetration of the chips, good circulation in the digester, moderate cooking and blowing at low pressure are some of the things advocated to accomplish this purpose. Overcooking weakens the ray cells with the result that they are ruptured during subsequent operations, thus liberating the pitch. Undercooked pulps, on the contrary, are not usually bothersome when used under identical conditions.

Pitch deposits have been found to contain foreign matter such as particles of dirt, metal, calcium salts algae, etc., and it is assumed that these particles were the cause of the agglomerating of the resins. Maintaining a cooking acid free from undissolved particles, and a clean acid system, may therefore be helpful in decreasing the residual resin as well as insuring against a dirty pulp, since, if the resins can be kept in a dispersed state, they will be eliminated in the washing.

Preventing the formation of colloidal sulphur and colloidal calcium sulphate by using the least possible amount of air has also been found helpful in reducing the resin content of the finished pulp.

Raising the cooking temperature to 160 deg. C. just before blowing the cook has been advocated since resins have a critical temperature at about 150 deg. C. above which they lose their tackiness. The reduction in yield and quality of the pulp caused by this high temperature, however, may not be warranted.

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* Presented at the Penn.-N. J.-Del. Div. of the Am. Pulp and Paper Mill Superintendent Association, Wilmington, Del., Oct. 18, 1936.

[1] Member TAPPI, Paper Makers Chemical Corp., Kalamazoo, Mich.

Investigations have shown that the resin content of sulphite pulps vary from .75 to 2.5 per cent, the higher amounts being found in cases where the pulps were poorly washed. Good washing is one of the main factors in producing a pulp of low resin content, especially when soft water is used, since it removes those resins which are present in emulsion form. The calcium and magnesium salts contained in hard water, however, form compounds with resins which are of a sticky nature and which may coagulate causing further precipitation of and agglomeration with like substances leading to the deposition of pitch.

Washing and Screening Pulp

Warm water is preferable for washing pulps since cold water will set the pitch on the fibers and it will remain in the pulp to be scrapped off in the beating and jordaning operations. Some authorities advocate the use of water up to 160 deg. F. and washing with pressure spray nozzles. It is also generally conceded that an acid wash is quite helpful in the removal of resins. The addition of waste sulphite liquor and alum in proper proportions to the slush stock has been advocated and successfully applied. This treatment forms a stable suspension or emulsion of the dispersed resins and thus retards, if not preventing, their deposition.

It has been found that by screening out the fines, amounting to about 2 per cent of the pulp, 20 to 50 per cent of the resins as well as the most of the dirt and ash is removed. The resins removed in this way consist of both those in dispersed form and also those contained in the ray cells and which will give trouble in subsequent operation if these ray cells are broken. A process based on this principle has been developed and now is in use in one of the foreign mills.

Bleached pulp as a rule gives less trouble from pitch than an unbleached pulp since the bleaching operation further oxidizes and changes the character of the resins and the additional washing received in the bleaching process removes more of the resin in dispersed form.

As stated in the beginning, numerous remedies for pitch troubles have been suggested and tried. Some of those pertaining to the treatment of pulp wood, chips and pulp in the pulp mill have already been mentioned and after all the best cure is to have a trouble free pulp available. The possibilities of reaching this ideal, however, still seems to be far in the future, even though some progress has been made. For the time being, therefore, it is necessary to take steps to overcome these troubles in the paper mill.

The amount of resins contained in a pulp are not a sure indication of pitch troubles or freedom from them, although some authorities state that a total rosin content of over 2 per cent is more than likely to give trouble, while pulps with less than 1 per cent usually can be used without difficulty. As previously stated, the ether extractable portion is, according to general acceptance, the trouble maker in the paper mill. Practical experience seems to bear this out for in several cases, even though the total extractable resins were low, the ether extractable was comparatively high and serious troubles were experienced. In one particularly stubborn case the total of resins extractable was only 1.4 per cent while the ether extractable was 1.3 per cent. In other cases pulps with high total extractable resins have given no difficulty whatsoever and a check on the ether extractable showed a low fat content.

It has also been found that sampling and extraction of pulps may lead to false conclusion since the dispersed resins may not be uniformly distributed throughout the pulp.

Stock Preparation

Freshly made pulps give more trouble than pulps that have been lapped and stored for a time and wet lapped pulp is worse than dry. It is assumed that this is due to the fact that a continuation of the same changes which occur in aging wood takes place, that is, a change in the character and a decrease in the content of resin, particlarly the fats, and a more firm setting of the resin on the fibers. These changes take place faster in the dry pulps than they do in moist pulps.

Pulps containing a high percentage of resins and which have been dried, however, are harder to beat since the resins adhere more firmly to the fibers.

Changing pulps will often overcome pitch troubles but there have been instances where identical stock being used on two machines has given trouble on one machine, while it gave none on the other. The explanation for this is that the mechanical conditions encountered on one machine were such as to break the unstable dispersion of resins causing them to coagulate and deposit.

Beating and jordaning of the stock has considerable bearing on pitch troubles since the ray cells may be broken thus liberating the resins. The ray cells are protected by the larger fibers in ordinary beating, but in hard, prolonged beating the ray cells are likely to be ruptured. Beating also loosens the resins attached to the fibers which then agglomerates with particles large enough to give trouble. Authorities disagree as to the effect of beating action on the dispersed resins. Some are of the opinion that it further disperses them, while others argue that beating breaks the dispersion. We know, however, that many emulsions can be broken by a churning action and it is entirely possible that beating, jordaning and the action of centrifugal pumps may aggravate pitch deposits. The shearing action of a jordan is bound to rupture the ray cells and liberate the resin contained in them.

Small resin particles which are scraped from the fibers are usually carried through the wire along with fine fibers, unless conditions are such that they agglomerate forming larger particles. With a closed white-water system, however, these particles increase in concentration and eventually cause trouble. The remedy in a case of this kind is to use fresh water and open up the system.

High temperatures aggravate pitch troubles since it aids in causing dispersion of more of the resin and makes them stickier and softer, thus increasing the dangers of agglomeration into large particles. It has been found that when the stock is heated the pitch troubles become worse, but when cool stock of identical character was run the trouble disappeared. Heat accelerates the hydrolysis of alum which according to one authority is one of the causes of pitch troubles in that when the decomposition of alum is great, large flocks of aluminum hydroxide form rapidly, removing resin particles from the unstable dispersion. In cold stock this coagulation is much slower and a fine flock is obtained which is mixed well with the pulp and will not filter out on the top of the sheet.

Grinding of wood at high temperatures gives a pulp which will usually cause pitch trouble on the paper machine, although the extent of these troubles will naturally depend upon the species and seasoning of the wood.

Dry alum fillers, etc., together wtih the insoluble sticky soaps formed by the reaction of the resin with calcium and magnesium salts contained in hard water cause the fine particles of resin which have become loosened from the fibers to accumulate in specks and also cause a precipitation of the dispersed resins.

A theory advanced recently is to the effect that slime aggravates pitch troubles causing an agglomeration of the

algae and resins. Perhaps this is one of the reasons why pitch troubles are worse in warm weather since the higher temperatures are inducive to algae growth. A number of mills have found that they experience less difficulty now that they are chlorinating the water than they did previous to chlorination and slime elimination.

Lubricating oils and grease or oils used as foam killers may cause pitch formation by agglomerating the particles of resins.

Air entrapped in the stock has been suggested as a contributing factor to pitch troubles since the tiny bubbles collect resins particles in their interfaces and carry them to the surface where the bubble breaks and leaves the resins to coagulate into larger particles. Overcoming the possibilities of air becoming admixed with the stock may, therefore, assist in eliminating pitch as well as assist in reducing foam troubles.

Rosin size has frequently been accused of causing pitch troubles, but this material can be considered only as a contributing factor instead of a cause. As a matter of fact, rosin size made by any reputable manufacturer will contain but very minute quantities of pitch if any at all, for even though there is some possibilities of pitch being contained in commercial rosin, pitch is unsaponifiable under the conditions existing in the size cooking process and being insoluble it is removed by the filter cloths used in the filtering process. It is true that pitch troubles are usually aggravated by the use of size, but this is only because the particles of precipitated size act in the same manner as other particles in the stock and which cause precipitation of the dispersed resins in the pulp. Cases have been known where the addition of rosin size to unsized stock that was giving trouble due to pitch, has apparently assisted in eliminating the difficulty. Some of the worst pitch troubles of which we have records have occurred when using sulphite pulps of high quality and without the use of size or any other added materials, except possibly a small amount of alum.

Pitch deposits taken from the beaters, screens, wire, presses, etc., of a machine on which sized stock is being run usually shows about equal portions of pitch and resin admixed with aluminum compounds, fibers, etc.

Pitch does not give the red-violet to brown color reaction which is characteristic of rosin with acetic anhydride and concentrated sulphuric acid, but instead gives a brown-black color turning to green. This test, however, is quite delicate and hard to rely upon. Sudan III which is a basic dye in alcoholic solution and which is absorbed by pitch turning the latter brown, while the fibers remain uncolored, is used for the microscopic study of resins in pulp.

Suggested Cures

Now that we have reviewed the causes of pitch troubles and the character of the resins causing them, we will pass on to some of the cures that have been suggested for application in the paper mill.

Bentonite clay, china clay, and talc have been used but their use is restricted to certain grades of paper since either the resulting color or ash content may be objectionable. However, in cases where they have been used they have been found quite helpful, especially bentonite. These materials absorb the resins and thus prevent them from coagulating.

Materials such as glue, starch, casein and gelatine have been used to some extent since they act as protective colloids and tend to stabilize the resins in suspension.

Alkalis, such as caustic soda, soda ash, trisodium phosphate, silicate of soda, sodium aluminate and lime help to disperse the resins and have been used with more or less success.

Other chemicals such as hypo or sodium thiosulphate, sodium bisulphite, sodium phosphate, sulphuric acid, and alum tend to harden the resins and for that reason are often times found helpful. Hypo seems to be the most consistent performer in this class of chemicals.

The addition of small quantities of bleach to groundwood or unbleached sulphite as early as possible in the process has been suggested as an aid in hardening and oxidizing the resins.

Emulsfying agents, such as Twitchell's reagent, made by sulphonating oleic acid and naphthalene, triethanolamine, and dispersing agents such as those used in the textile trade have been found to stabilize the dispersed resins thus preventing agglomeration. Since these agents reduce the surface tension, however, there may be an increased tendency toward foaming.

The above mentioned so-called pitch cures are usually added to the stock in the beater as early as possible and when making sized papers they are added before the rosin size. Sometimes two or more are used in conjunction with each other, for instance, an alkali may be added to disperse the pitch and then starch or glue added to keep the dispersion stable.

A careful control of the acidity or pH of the stock is oftentimes very beneficial but there does not seem to be any optimum value which can be named since it will differ with each individual set of conditions.

Strips of felt hung at various points of the system so that they come in contact with the surface of the stock assist in collecting the pitch particles. Oxidized metal surfaces also attract pitch and can be used for its removal.

Free stock and low temperatures will give less trouble than slow stocks. The use of live steam for freeing up the stock is not good practice since it not only raises the temperature of the whole, but it produces local overheating causing coagulation of the resins in that area.

The removal of pitch deposits in the beaters, screens and on the wire sometimes present real problems. Hot solutions of caustic soda or soda ash are sometimes effective in cleaning the beaters but sometimes it is necessary to resort to the use of scrapers. Solvents, such as kerosene, gasolene, carbon tetrachloride, alcohol and xylene will be found helpful in removing these deposits.

Spots on the wire are usually removed by the use of the alkalis or solvents mentioned above or by acids such as sulphuric or muriatic. Live steam in conjunction with these materials facilitate the operation, but in stubborn cases it is necessary to resort to the use of a brush on each individual spot.

In the final analysis, everyone is agreed that pitch troubles offer a problem which has almost defied all attempts to solve it, but it is hoped the ideas reviewed in this paper will at least be found helpful.

Washington Pulp & Paper Dissolves

Portland, Ore., October 17, 1936—Washington Pulp and Paper Corporation, Port Angeles, Wash., and Northwestern Power and Light Corporation, both subsidiaries of Crown Zellerbach Corporation, are being dissolved and hereafter will be known as divisions of Crown Zellerbach. The Seattle P.-L.'s entire newspaper requirements of around five thousand tons yearly has been furnished by the Port Angeles mill of Washington Pulp & Paper Company. The newspaper is closed owing to a strike and its reopening is uncertain. The Camas, Wash., plant of Crown-Willamette Paper Company, also a subsidiary of Crown-Zellerbach, is said to be operating at capacity with close to 2000 employes, the largest number ever employed by the plant.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Analysis and Testing

Second Report of the Pulp Evaluation Committee. Anon. World's Paper Trade Rev. 104: 1340-1344, 1380-1385; 1420, 1422, 1460, 1462, 1499-1504, 1546-1550 (Oct. 25, Nov. 1, 8, 1935); Paper Maker 90: TS172-176, TS182-192 (Nov., Dec., 1935); 91: TS6-10, 16 (Jan., 1936).—A detailed description of the British sheet machine as it is now being produced drawing attention more particularly to the modifications and improvements made since the original design seven years ago, which modifications do not alter the performance of the original apparatus in any fundamental manner or render existing sets obsolete.—A.P.-C.

Pulp Testing by a Rapid Sheet Making Process. James Coghill. Paper Trade J. 102, No. 9: 27-44 (Feb. 27, 1936).—An analysis of the possible uses of test sheets and of the requirements of an adequate test-sheet-making process and equipment set up, together with an illustration and explanation of the design of the equipment developed to meet these requirements and a discussion and analysis of the various features of the design and use of the equipment. Standard procedures for use of the equipment and testing the sheet are recommended and explained. The overall reproduceability of results by the same and by different operators, and the degree to which the method and apparatus developed meets the initial requirements and the manner of use for each requirement, are discussed. The report includes graphs and tables which are of a preliminary nature, based on only 1 month's experimentation with the apparatus and must be verified and amplified by further work.—A.P.-C.

Rapid Pulp and Paper Testing Outfit. F. M. Williams. Paper Mill 58, No. 34: 19, 21 (Aug. 24, 1935).—A very brief description of the outfit of the Williams Apparatus Co., Watertown, N. Y., which comprises, mounted on a 6-ft. table, the following apparatus: hydraulic press, 8 x 8 in. sheet mold, freeness tester, electric sheet drier, testing oven with two sets of scales, and an electric sample mixer. —A.P.-C.

The Trend of Paper Testing. W. Boyd Campbell. Pulp Paper Mag. Can. 37: 256-259 (April, 1936).—Testing tends to develop from the type of general test where many factors are included in a way similar to that of ordinary use and become a series of tests each for specific quality factors. It is pointed out, that such specific tests must omit some of the factors inherent in the more general tests. Paper testing is becoming more specific in measuring factors of importance in the use requirements, particularly for printing. The methods of testing for related properties of color, brightness and opacity which have lately been used, are reviewed.—A.P.-C.

Physical Characteristics and Printing Quality of Paper. John Niemczyk. Paper Trade J. 102, No. 18: 31-33 (April 30, 1936).—A discussion of the more frequent complaints due to paper encountered in printing and of their causes, with a plea for co-operation between paper makers and printers to develop suitable tests for evaluating the printing quality of paper.—A.P.-C.

Some Notes on the Revision of Methods for Measuring the Strength of Paper. F. T. Carson. Paper Trade J. 102, No. 19: 39-42 (May 7, 1936).—A discussion of the proposed revisions of the official TAPPI methods for the determination of tensile strength, stretch and bursting strength.—A.P.-C.

Improved Methods for the Examination of Paper. H. N. Lee. Tech. Studies Field Fine Arts 4, 93-106 (1935).—These methods are adapted to the examination of papers in books or works of art. A mixture containing 5 volumes of saturated calcium chloride solution, 10 volumes of water and 4 volumes of aqueous 2 per cent potassium iodide saturated with iodine gave the following color reactions when applied to dry fibers: red (with cotton, linen, bleached hemp and paper mulberry; orange-pink (with purified bleached coniferous sulphite pulp); very pale lavender (with bleached coniferous sulphite pulp); pale reddish violet (purified, bleached hardwood sulphite pulp, long-fibered parts of esparto pulp); blue-violet (bleached coniferous sulphate pulp); grayish blue (bleached and unbleached soda pulp and the shorter part of bleached esparto); blue (bleached straw and bleached bamboo); deep yellow (groundwood, jute, and lignified fibers generally); yellows of various shades (unbleached sulphite and some other unbleached pulps. Formulas are given for other staining solutions more complex, but which give similar colors. Without resorting to an admixture of acids, a solution containing 10 g. potassium iodide and 10 g. iodine in 5 cc. of water serves to differentiate between various fibers. All turn brown at first, but after washing, rag turns red, soda pulp blue, sulphite pulp violet, groundwood yellow, while unbleached pulps remain brown. These colors are ephemeral. Simple tests are also given for rosin, starch, loading materials, glue casein and formogelatin. By the use of a hitherto unpublished technic in sectioning, applied by F. J. Hoxie to cotton yarns, the study of paper structure is facilitated. The dry material is soaked in 2 changes of amyl acetate, then in 3 to 4 progressively stronger solutions of cellulose nitrate in amyl acetate, the final one being highly viscous. After removal, the fibers are hardened in chloroform, stored and cut in benzene, and then mounted in castor oil. Sections may then be cut by microtome or common hand method. Permanent papers should have a pH of not less than 5.—A.P.-C.

Determining the Stretch of Paper. Paper Trade J. 102, No. 8:132-133 (Feb. 20, 1936).—Text of the proposed official TAPPI method.—A.P.-C.

Tensile Strength of Paper. Paper Trade J. 102, No. 8:133 (Feb. 20, 1936).—Text of the proposed final revision of the official TAPPI method.—A.P.-C.

The Nature and Measurement of Paper Acidity. B. L. Browning and R. W. K. Ulm. Paper Trade J. 102, No. 8:69-86 (Feb. 20, 1936).—A study of the problems involved in the determination of the acidity of paper, considered in the light of all available data. The TAPPI tentative standard method is studied with special reference to variations in the procedure involved; and the nature of the acidity of paper is studied with regard to hydrolysis and acid formation during the water extraction, the effect of metal ions, and the nature of extracted material by potentiometric titration.—A.P.-C.

The Determination of the Degree of Acidity or Basicity of Paper. Kurt Berndt, Bergisch Gladbach. Zellstoff U. Papier 15, No. 12:487-491; 16, No. 1:15-18 (Dec., 1935; Jan., 1936).—The determination of the pH of paper by the extraction method does not give an absolute value of the pH since the action of boiling water has an action on the size and alum in the paper as well as other constituents in the paper. The ordinary distilled water with a pH of 5.0 to 5.5, due to the carbon dioxide absorbed from the air, is suitable for the pH determination. Testing the pH of paper by noting the color of the indicator which is dropped directly on the paper gives consistently lower values than the method of extraction with distilled water, and the acidity values determined by titrating with a base bore no relation to the pH. Papers are classed according to their degree of acidity into uses. The methods used in the investigation are given in detail. —J.F.O.

Automatic Bursting Tester. O. F. Gunther. Wochbl. Papierfabr. 66, No. 51:955 (Dec. 21, 1935).—The tester has replacable diaphrams so that it can be converted into the same areas as the Mullen tester and the German tester of ten square centimeters. The tester operates with an oil circulating system and is completely automatic.—J.F.O.

Light Reflection. Walter W. Wildeman. Paper Industry 18:108-110 (May, 1936).—A discussion of the possibilities of utilizing light reflection characteristics as a means of inspecting paper.—A.P.-C.

Instrument for Testing for Fastness to Light. Zellstoff U. Papier 16, No. 4:140-41 (April, 1936).—The quartz lamp is not suitable for testing the fastness of color to light, since some of the rays of the sun which have an effect on color are absent. A gas-filled Wolfram lamp is used which gives an illumination fifty times as strong as the sun; an exposure of one to two hours is equivalent to several months' exposure of the sun. The instrument is described in detail.—J.F.O.

Whiteness P. F. I. E. Stephansen. Papir-J. 23. No. 22:244-246 (Dec. 16, 1935).—The article describes a method for determining the whiteness of pulp and paper with a tester developed at the Papir Inductriens Forskningsinstitutt (P. F. I.) in 1933. Preliminary experiments had shown that apparently there was always a regular relationship between the relative degree of whiteness of the samples and the pure colors as compared to the visual determination of the amount of white. The latter is determined by the lowest readings of the photometer and for yellow samples the blue readings are plotted. The amount of pure color in the samples is determined by the difference between the highest and lowest photometer readings. For yellow samples it is always the difference between the readings obtained with the red and blue filters. If the reading for the blue filter is B and for the red filter R, the difference of white minus pure color can be expressed by the equation $B - (R - B)$; this difference proved to be in direct relationship to the visual evaluation of the amount of white, although, of course, it did not determine the actual whiteness of the samples. The direct amount of white of the samples was then determined by comparison with a barium sulphate standard and a Zeiss reflectometer. The values plotted as ordinates against the photometer values $B - (R - B)$ as abscissae give a curve determining the whiteness, which in future will be called the percent. "P. F. I. whiteness."—C.J.W.

The Structure of a Sheet of Paper. Zellstoff U. Papier 15, No. 12:491-92 (Dec., 1935).—Photomicrographs of cross sections of various kinds of paper.—J.F.O.

The Ability of Paper to Occupy Space or the Inflation Value of Paper. Paul Klemm. Wochbl. Papier fabr. 66, No. 52:975 (Dec. 21, 1935).—The inflation value of paper is the reciprocal of the density in grams per square meter.—J.F.O.

Air, a Constituent of Paper. Paul Klemm. Wochbl. Papierfabr. 67, Special Number; 47-50 (Dec., 1935).—Air is a very important constituent of paper. The physical values of density is too abstract, there should be some other term to describe the amount of air in paper. Paper free from loading with a density of 0.3 grams per cubic centimeter has an air content of 80 per cent, and paper of a density of 1.3 has an air content of 12 per cent. With loaded papers, the specific gravity of the filler has an important bearing.—J.F.O.

Paper Quality and Materials for Process Equipment. J. D. Miller. Paper Mill 58, No. 31:15-17 (Aug. 3, 1935). —A brief discussion of the possible effects various of the newer materials may have on paper quality—A.P.-C.

Accelerated Aging Tests for Wall Papers and Printing Inks. R. Louchart. Papier 39: 129-135 (Feb., 1936). —A description of the Fade-Ometer, of the technique of its use and of its value for evaluating the light fastness of wall paper colors and printing inks.—A.P.-C.

Paper As a Packing Material for Foodstuffs. Julius Grant. Food 4:329-332 (May), 401-404 (July), 484-486 (Sept., 1935); 5:122-124 (Dec., 1935); 187-190 (Feb., 1936).—A general discussion of paper for packing food stuffs, dealing with: manufacture of pulp and paper, physical tests, tests for chemical purity, determination of fiber contents by staining methods, printability and effects of adhesives, specially paper (*e.g.*, vegetable parchment, waxed and greaseproof papers, transparent wrappings), the packaging of fatty foods, the influence of the paper on transmission of moisture and light and on autoxidation, and the catalytic effect of impurities.—A.P.-C.

Bursting Strength of Paper. Paper Trade J. 102, No. 8:131-132 (Feb. 20, 1936).—Text of the proposed revision of the TAPPI official method.—A.P.-C.

Paper Properties

Permanence of the Earliest Sulphite Paper. James Strachan. Paper Maker 91:TS17-18 (Feb., 1936).—A sample of sulphite paper made at Northfleet Paper Mills in April, 1886, had a substance of 29 lbs. demy 480's (approximately 108 g. per sq. m.), a bulk of 0.007 in. per single sheet, a bursting strength of 31 lbs. per sq. in. (Schopper), a mean tensile strength of 23 lbs. per in. width (Schopper) and a mean folding strength of 270 double folds (Schopper). While comparative figures on the paper as made are lacking, it is concluded that the above figures indicate that the sample in question has undergone very little deterioration, and that normal sulphite papers may be expected to have a very high degree of permanency.—A.P.-C.

The Curling of Paper. J. McLaren. Paper Maker 91:TS21-22 (Feb., 1936).—A brief discussion of the more probable causes of curling, with suggestions for its prevention.—A.P.-C.

The Extension of Paper by Adsorbed Water Vapor. G. Larocque. Pulp Paper Mag. Can. 37:199-209 (March, 1936).—Values were obtained for the equilibrium moisture content of twenty typical papers, as well as their expansions in both machine and cross directions, in an adsorption-desorption cycle from 5 to 95 per cent relative humidity and back. It is suggested that strains are present in the paper as a result of the manufacturing process; these strains are released when the paper is subjected to an environment of 70 per cent relative humidity or greater, and there is a permanent alteration in the paper dimensions, the subsequent moisture-extension behavior being then more regular than it was before. Consequently, a relatively short conditioning of paper at a high humidity

(about 85 to 95 per cent) should greatly reduce the likelihood of curling, wrinkling and misregister.—A.P.-C.

Pitch

Method for Estimating the Injurious Resins in Pulp. G. N. Konopatzkii. Tzentral. Nauch.-Issledovatel Inst. Bumazhnoi Prom. Materialui 1935, No. 1:151-179; C. A. 30:3230.—The method is based on the coagulation of the negatively charged colloidal solutions of "injurious resins" (resins, fats, lignin and tannin) by a definite quantity of a positively charged colloid, such as malachite green, and comparison of the partly decolorized solution with a standard solution of the dye in a Dubosc colorimeter. Shake well a fine suspension of 10 grams of dry pulp in 200 cc. of water with 200 cc. of 0.1 *N* sodium hydroxide, allow to stand for 1 hour and filter. Neutralize 20 cc. of the filtrate with 0.1 *N* hydrochloric acid in the presence of phenolphthalein as catalyst and dilute to 30 cc. with water. Shake well this solution with the reagent (3 cc. of 0.25 per cent malachite green, 2 cc. of 5 per cent barium chloride and 5 cc. water), let stand 1 hour to complete the coagulation and deposition. Centrifuge the mixture for 3-5 minutes and compare with the standard of malachite green prepared as above and diluted to 40 cc. volume.—C.J.W.

Further Investigation of Pitch Problems. S. R. H. Edge. World's Paper Trade Rev. 105:536, 538, 578, 580, 620, 622, 660 (Feb. 14, 21, 1936).—Mill operations showed a certain correlation between the previously described pitch test and pitch troubles in the mill, the amount of pitch obtained in the test increasing considerably when pitch trouble was encountered in the mill. Variations in pH do not seem to have any bearing on variations in pitch trouble in the mill, though possibly more pitch is formed at pH 7.0 than under more acid or alkaline conditions. The ether extract of pulp is mainly uncombined resinous material, while the alcohol extract contains in addition material containing nearly 40 per cent of ash-producing constituents. "Fatty" acids present in the saponifiable matter recovered from pitch obtained in the paper mill are very similar to the ether extract of the medullary ray fibers, indicating that these so-called "fatty" acids are chiefly responsible for pitch production.—A.P.-C.

Preliminary Investigation of the Chemical Nature of Pitch. R. D. Haworth. World's Paper Trade Rev. 105: 660, 662, 665 (Feb. 21, 1936).—The composition of the pitch which forms in paper mills was studied by extracting with alcohol-benzene mixture, evaporating the solvent, extracting with petroleum ether and separating into (1) free acid, (2) unsaponifiable, (3) saponifiable, (4) "fatty" acids and (5) "resin" acids, by methods similar to those used by Hibbert and Phillips (*Can. J. Research* 4:1-34 (1931)). By this treatment pitch and medullary ray fiber extract gave very similar results, which differed appreciably from those of Jack pine resin. The unsaponifiable fraction contains sitosterol and resene. The "fatty" acid fraction contains small quantities of linolenic and linolic acids, and the larger portion of this fraction is probably a monobasic acid containing at least 20 carbon atoms.—A.P.-C.

Paper Specialties

New Standards for Condenser Paper. D. N. Zhokhov. Bumazhnaya Prom. 14, No. 11:43-48 (1935); C. A. 30: 3230.—A review of the approved standard and classification of various types of condenser paper and a critical discussion of methods of electric, mechanical and chemical examination.—C.J.W.

Paper Bags. Methods of Impregnation of Paper for the Production of Water- and Air-Permeable Paper Containers. V. A. Grabovskii. Tzentral. Nauch.-Issledovated. Inst. Bumazhnoi Prom. Materialui 1935, No. 1:106-138; C. A. 29:3231.—Of the methods of impregnating different grades of paper with various materials for the production of paper bags with sufficient degree of water- and air-impermeability, the impregnation with solutions of bitumen in mineral oils (preferably in autol) is the most satisfactory. Mixtures of equal parts of bitumen and oil give the best results. The ratio of bitumen and oil in the mixture can be varied, according to the properties of the paper, from 25-50 per cent bitumen to 75-50 per cent oil. Paper is best impregnated with a mixture at 100° C. in the Müller machine at the rate of 63 meters per minute with the drying rolls heated with steam at 2.5 atmospheres pressure. About 35-40 per cent of the mixture of the weight of sized paper is consumed in the process of impregnation. Of the papers used, the best practical results were obtained with the impregnation of bag paper of 80 grams per square meter with the air-permeability not exceeding 150 square centimeters. Various procedures for impregnation and fireproofing of papers are described.

Paper for Special Paper-Bag Containers. O. G. Ioffe. Tzentral. Nauch.-Issledovatel. Inst. Bumazhnoi Prom. Materialui 1935, No. 1:139-151; C. A. 30:32331.—The problem of suitable and inexpensive containers for the transportation and storage of various materials, particularly fertilizers and sodium chloride, is discussed.—C.J.W.

Can Pulp Suitable for Viscose and Medium Grades of Printing Paper Be Produced in One Cooking Operation? M. G. Eliashberg. Bumashnaya Prom. 14, No. 9:17-27 (1935); C. A. 30:3229.—For the production of pulp with least possibly damaged fibers suitable for reworking into viscose, wood is pulped with an acid of rather high combined calcium oxide (0.95-1 per cent). Since the color of pulp for viscose rayon production is not important and the greater part of the lignin is removed in the initial stages of bleaching, the bleaching of viscose pulp should be carefully done and the pulp only partially bleached. The method of producing a pulp for viscose results in a durable stock containing considerable amounts of carbohydrates that is suitable for the production of medium grades of printing paper. It is, however, considered that production of pulp for viscose and printing paper is one pulping operation or in the same production unit is impractical, because of the difference of the subsequent treatment of the two kinds of pulps. Some of the more important features are the necessity of a separate bleaching, because a whiter pulp is required for the production of paper. The presence of carbohydrates in viscose pulp in undesirable and should be limited to a maximum of 6-7 per cent pentosans. In printing paper a higher content of carbohydrates is desirable; it is obtained by the use of a higher combined acid and by a milder pulping.—C.J.W.

Improvement of Paper and Paper Board with Asphalt Emulsion. Fritz Hoyer. Gelatine, Leim, Klebstoffe 3:208-212 (1935); C. A. 30:2379.—Most of the processes that increase the resistance of paper to water and temperature are relative expensive but both tar and asphalt are used in the production of an inexpensive, resistant paper. Tar has been used for many years, asphalt for the last decade. The disadvantages of the tar treatment are strong odor and great brittleness. Asphalt is usually applied by either brush coating or dipping but it may be applied as an emulsion, the emulsion broken and the asphalt particles caused to precipitate on the fibers. Asphalt-coated papers have marked resistance to water and a marked reduction in hygroscopicity.—C.J.W.

Splitting Tendencies in Paper Products. A. J. Brax. Finnish Paper and Timber J. 17, special issue :334-336, 338, 340 (April, 1936).—B. studies the felting and split-

ting tendencies of sheets combined from webs of different furnishes, such as are used in the manufacture of duplex paper. The higher the beating degree of the fibers, the better the felting of the different webs, chemical pulp being superior in this respect to mechanical pulp. The lower sheet has the greater effect upon the felting properties; however, on account of efficient water removal, it should consist of the freer pulp. To facilitate felting and decrease the danger of splitting into individual layers, chemical pulp of a suitable beating degree should be mixed with the mechanical pulp, or the fibers be deposited in such a manner, that those of the highest beating degree are lying closest to the contact surfaces. Curling and warping of the finished product will result when two sheets are united with a great difference in their respective beating degrees. Alkaline fibers have somewhat better felting tendencies than acid pulps.—C.J.W.

Anti-Tarnish Paper. Papier-Ztg. 61, No. 27:590 (April 1, 1936).—A criticism of the incorrect specification that paper for wrapping metal goods should be free from "chlorine and acid." Hardly any paper contains free chlorine and acid; this, however, is no guarantee that articles wrapped in them will not rust or tarnish, especially if the paper is porous and admits air. The term should read "suitable for wrapping metal parts" and indicate the kind of metal, since paper suitable for steel wrapping will not always give sufficient protection to silverware, etc. The best paper for wrapping steel is glassine coated on both sides with a good paraffin.—C.J.W.

Cigarette Paper. Papier-Ztg. 61. No. 28:607-608 (April 4, 1936).—Clean linen rags are the most suitable raw material, although ramie and esparto as well as certain sulphate and sulphite wood pulps have also been used with good success. Thorough sorting of the rags is essential and each kind should be cooked separately; hence, smaller cooking units are preferable to large digesters. The pulp should not be beaten too slow or the resulting paper will lack the required porosity. Fourdrinier Yankee machines are employed for the manufacture of the paper; here, again, it is better to work with smaller units.—C.J.W.

Cloth Lined Paper. Papier-Ztg. 61, No. 29:624 (April 8, 1936).—Cloth lined paper consists either of two layers of paper with a tissue reenforcement in between, or of one paper layer backed with cloth. It is used in the bag and envelope industry, for wrapping and similar purposes where strength and resistance to wear are essential.—C.J.W.

Chemical Fireproofing Agents. K. Sittenfeld. Kolloid-Z. 57, No. 1:121-125 (April, 1936).—The article reviews the important chemical agents or mixtures of chemicals used for preventing or retarding the ignition of certain inflammable substances, such as paper, straw, wood, tissues of all kinds, etc. Methods for testing the efficiency of such agents are described. A table is included listing the most important German patents on fireproofing substances.—C.J.W.

Tracing Paper. Papier-Ztg. 61, No. 30/31:652-652 (April 11, 1936).—The article discusses oiled tracing paper produced by immersing non-transparent paper in oil or rosins baths with subsequent careful drying, and naturally transparent tracing papers, produced by prolonged beating in a way similar to glassine paper; their transparency, however, is uniform throughout and not cloudy, as in the cheap imitation papers. The resistance to erasure is satisfactory in both types. Oiled tracing paper is perferable for valuable long time records, while the other kind is suitable for pencil drawings and sketches of a more temporary nature; the latter can be manufactured with either rough finish (for pencil work) or smooth finish (for ink tracings).

Progress in the Manufacture of Water-Proof Bitumen Paper. Friedrich Huth. Wochbl. Papier Fabr. 66, No. 47:887-888 (Nov. 23, 1935).—The multiple uses of bitumen paper single and multi-layer including multi-layer crepe paper are first briefly mentioned. The latest method of applying the bitumen, viz; the preparation of a water soluble emulsion which is added direct to the beater; is described. Different types of emulsifiers are described, as well as several patents on the subject. Protective colloids or stabilizers, such as rosin soap, oleates, naththene soaps, alkaline jellies, water-glass, neutral or alkaline sulphite waste liquor are used. A sample beater formula is given. —J.F.O.

New Methods for the Manufacture of Water-Proof and Oil-Proof Papers. Fritz Ohl. Wochbl. Papier fabr. 67, No. 1:5-8 (Jan. 4, 1936).—It is rather difficult to manufacture papers which are both water-proof and oil-proof at the same time and until recently there was no paper available which would pass these specifications. But from the scores of new methods, a few are worthwhile, such as, the use of nitro-cellulose and related compounds, chlor-caoutchouc, the different methods of using bitumen, and vinyl compounds; these methods are described and their results discussed.—J.F.O.

Water-Proof Paper. Zellstoff U. Papier 15, No. 12: 514-18 (Dec., 1935).—The different methods for water-proofing paper are discussed, and then several patents utilizing these methods are described.—J.F.O.

Silvering of Paper and Foil. Fritz Ohl. Wochbl. Papierfabr. 67, No. 12:222-24 (March 21, 1936).—Description of a patented method for silvering paper and foil by electrolysis.—J.F.O.

Lacquered and Impregnated Papers. Burgel. Zellstoff U. Papier, 15, No. 12:498-504; 16, No. 1:19-21 (Dec., 1935; Jan., 1936).—The author first discusses the various uses for hard papers, particularly in the electrical field; the manufacture of hard papers, the lacquering or impregnation, the drying, and the recovery of the solvents; and special mention is made of the Igraf Impregnating process. Descriptive drawings are given of the various pieces of apparatus.—J.F.O.

Transparent Foil from Cellulose and Cellulose Derivatives. D. Kruger. Zellstoff U. Papier 16, No. 1: 9-11; No. 2:49-51 (Jan., Feb., 1936).—By means of 61 references in the literature, throughout the world; the author first names the various brands or kinds of transparent foil, briefly discusses their manufacture, the structure of the foil, the mechanical properties, (the strength of foil from regenerated cellulose is considerably greater in the longitudinal direction than in the cross direction), the influence of water on the transparent foil, the permeability for moisture and gases, the permeability of light, and the electrical insulation ability. Cellophan and other foil from regenerated cellulose have a higher permeability for the biological acting ultra violet rays of the sun than glass. Cellophan is not suitable for high tension insulation material.—J.F.O.

Completely or Partially Transparent Paper Made from Pulp, for the Packaging of Foodstuffs. Ultrazell G. m. b. H. Berlin. Finn. pat. 16,493 (Oct. 7, 1933).—The paper contains a chemical substance which absorbs the ultra violet rays. The paper is made of acetate cellulose or parchment.—J.F.O.

Corrugated Paper. Pierre Drewsen assignor to Hinde and Dauch Paper Co. Can. pat. 356,459 (March 10, 1936).—Mixed paper stock is disintegrated in the presence of cold dilute solution of not more than 4 per

cent caustic alkali based on the weight of the fiber. A portion of the causticity is maintained throughout the paper-making process.—A.P.-C.

Composite Reenforced Paper Fabric. American Reenforced Paper Co., Fr. pat. 795,951 (Oct. 4, 1935).—In a composite reenforced paper fabric suitable for the formation of box corner stay strips, the layers of material constituting the fabric are secured together face to face by a waterproof adhesive such as asphalt in which reenforcing unspun fibers are embedded.—A.P.-C.

Protective Coloring of Documents Such as Bonds or Notes. Sydney G. Clifford assignor to Waterlow and Sons, Ltd., U. S. pat. 2,030,351 (Feb. 11, 1936).—In producing a background design in continuously variegated colors, each of a number of partial designs is printed in a set of bands of distinctive colors separated by merging bands of the adjacent distinctive colors, the set of color bands of one partial design extending at a substantial angle to another set of color bands.—A.P.-C.

Laminated Paper. Robert F. Nelson assignor to Glassine Paper Co., Can. pat. 355,492 (Jan. 21, 1936).—Greaseproof and moistureproof laminated material is manufactured by coating one surface of a sheet of greaseproof paper, which is non-absorbent of wax, with melted wax at 120° to 160° F. A second sheet is applied to the waxed surface by pressure, the temperature of the sheets at the point of contact being 140° to 160° F.—A.P.-C.

Absorptive Paper. Milton O. Schur assignor to Brown Co., Can. pat. 354,787 (Dec. 17, 1935).—A waterleaf web, made of any chemical pulp, is passed through a bath containing about 0.75 per cent of cellulose xanthate, 1 per cent of boric acid, 1 per cent of ammonium carbonate and a wetting agent such as 0.05 to 0.25 per cent Nekal BX. From this bath it is passed through squeeze rolls and over a bank of redrying cylinders.—A.P.-C.

Typewriter Paper of "Deferred Indelibility." John G. Callan. Brit. pat. 434,852 (Sept. 10, 1935).—Paper carries a thin even sizing such as one containing casein, starch or glue, following surface irregularities of the paper and capable of receiving ink from a typewriter type impression which is at first easily erasable but slowly penetrates through the sizing to form a progressively more indelible impression.—A.P.-C.

Waterproof Corrugated Board. Hermann Kuppel, Fr. pat. 792,937.—Corrugated board is single- or double-faced with a waterproofed paper, which may also be reinforced as with jute, cotton, sisal, etc., fabric.—A.P.-C.

Waterproof and Greaseproof Paper. Clifford S. Johnson assignor to International Latex Processes, Ltd., Can. Pat. 354,114 (Nov. 12, 1935).—Paper is treated with an aqueous dispersion of rubber containing a minor proportion of protein material such as casein. A protective material, such as cellulose acetate lacquer, is applied, and the solvent evaporated. The rubber deposit is then vulcanized.—A.P.-C.

Paper. Elmer C. Schacht assignor to Behr-Manning Corp. Can. pat. 354,518 (Dec. 3, 1935).—A mixture of comminuted cork and fibers with sufficient water to form a stock has a flexible rubber-like binder incorporated in the web. The rubber-like binder may be rubber latex, guttapercha latex or balata latex. The amount used is sufficient to increase the strength and resilience of the web and render it resistant to creasing and flexing.—A.P.-C.

Paper. Elmer C. Schacht assignor to Behr-Manning Corp. Can. pat. 354,517 (Dec. 3, 1935).—A mixture of comminuted cork and fibers with water is formed into a web with a flexible resinous binder, such as Glyptal resins, incorporated uniformly. This makes it resistant to creasing and flexing. *E.g.*, 50 parts of alkyd resin together with 20 parts of cork and 30 parts by weight of fiber saturated with water is placed in a steam-jacketed mixer for 35 min. at 85° C. and more water is added. This is then beaten for 1 hr. and run on a cylinder machine. The paper is then passed through a chamber at 130° C. to set the resin. This is suitable for the manufacture of artificial leather, floor coverings, etc.—A.P.-C .

Process for Waterproofing and Greaseproofing Paper and Cardboard. H. A. T. Calmels. Fr. pat. 792,775.—The paper or board is treated with a solution of glue containing sodium or ammonium alginate. The glue solution is neutralized before adding the alginate to prevent precipitation of the latter.—A.P.-C.

Observations on the Manufacture of Photographic Base Paper. V. Gruenman. Papier 39: 137-143 (Feb., 1936).—A general outline of the special precautions required in the production of this grade, bringing out more particularly the very great difficulties inherent to its manufacture.—A.P.-C.

Transparent Cellulosic Sheets. La Cellophane. Fr. pat. 789,027 (Oct. 22, 1935).—The sheets are impermeabilized by a varnish containing a cellulose derivative, a plastifier, a wax and "hydroresinates" which are the products obtained by hydrogenating vegetable resins of the colophony type or their derivatives such as esters.—A.P.-C.

Transparent Paper. Solomon G. Lipsett assignor to Appleford Paper Products, Ltd. Can. pats. 354,225 and 354,226 (Nov. 19, 1935). *No. 354,225*—Polymerized vinyl acetate is applied to the surface of a sheet in solution of a concentration exceeding 50 per cent by weight. The compound has a refractive index within 0.06 of that of the cellulose fibers. The solvent is evaporated. This leaves a smooth coating over the surface. *No. 354,226*—A thin sheet of paper is impregnated with about 5 per cent of mineral oil heated to at least 100° C., and a coating of 5 to 30 per cent polymerized vinyl acetate is applied to the surface to seal the liquid.—A.P.-C.

Improved Paper and Process for its Manufacture. C. H. Dexter and Sons, Inc. Fr. pat. 793,089.—*Musa textilis* or similar long-fibered material is cooked with caustic soda for a prolonged period (up to 24 hr. or more), under high pressure (preferably at least 7 kilos per sq. cm.) and at a temperature of about 160° C. The resultant pulp is fed to a paper machine at a consistency of 0.002 per cent, and the portion of the wire at the breast roll end is inclined upwardly at an angle of 45° and then slopes down more gradually to the couch roll. The paper has the porosity, softness, pliability and strength characteristic of yoshino paper, but has a more uniform formation and is free from fuzz.—A.P.-C.

Chemically Modified Paper. George A. Richter assignor to Brown Co. Can. pat. 355,155 (Jan. 7, 1936).—Paper is mercerized with caustic soda of less than 18 per cent strength, washed free from chemical solution, and dried.—A.P.-C.

Paper. George A. Richter assignor to Brown Co. Can. pat. 355,156 (Jan. 7, 1936).—An 8 per cent solution of cellulose ether is mixed with a 7 to 8 per cent caustic soda solution and diluted to 0.5 to 2 per cent cellulose content with caustic soda of sufficient causticity to avoid precipitation of the ether from the solution. An absorptive paper base is impregnated with the diluted solution to a cellulose ether content of 0.5 to 2 per cent and treated with an acid reagent to precipitate the ether from the solution *in situ* in the base.—A.P.-C.

Laminated Paper. Lloyd L. Dodge assignor to Rhinelander Paper Co. Can. pat. 354,301 (Nov. 19, 1935).—A layer of thermoplastic material is interposed between plies of dried, uncalendered, well-hydrated paper. Water (10 to 40 per cent by weight) is incorporated in the

paper, and then the paper is calendered under high pressure at elevated temperature. The paper is relatively transparent.—A.P.-C.

Cigarette Paper. Schoeller & Hoesch G.m.b.H. Fr. pats. 786,460 to 786,462 (Sept. 3, 1935).—No. 786,460—A consistent white ash is obtained by impregnating the paper with an aqueous solution of the products of hydrolysis (only slightly or not sweet) of polymerized carbohydrates, the hydrolysis being carried far enough to produce not only mono- but also di-, tri- and tetra-saccharides soluble in water, and also of a small amount of salt. *No. 786,461*—The combustion of cigarettes is improved by impregnating the paper with a solution of sodium stearate, to which beeswax or other wax may be added in the form of an emulsion. *No. 786,462*—The aroma of cigarettes is improved by adding beeswax in aqueous emulsion or a solution of honey or both to the paper.—A.P.-C.

Improvement in the Manufacture of Paper for Bank Notes, Currency, Etc. Portals Ltd. Fr. pat. 793,430.—Thread (*e.g,* rayon) metallized with a non-corroding metal such as gold, or a non-corroding metal wire such as stainless steel or tungsten, is incorporated longitudinally in the paper during its formation on the paper machine wire or cylinder.—A.P.-C.

Impregnated Paper. Société Industrielle du Titane. Fr. pat. 793,703.—In order to prevent the transparency produced on impregnating paper with paraffin, waxes, resins, etc., titanium oxide is added to the paraffin, etc., in presence of dispersive agents such as polycyclic alcohols and their fatty acid esters, polyamines and their fatty acid esters, amino-acids, animal products such as brain, bile, egg yolk, cholesterin, lecithin and triethanolamine stearate.—A.P.-C.

Toweling Paper. Milton O. Schur assignor to Brown Co. Can. pat. 353,559 (Oct. 15, 1935).—The paper contains about 3 per cent of tanned glue solids, and has a preservative against the putrefaction of the glue solution.—A.P.-C.

Marbled and Mottled Papers. Papeterie 58: 2-9, 50-54, 102-106 (Jan. 10, 25, Feb. 10, 1936).—Practical operating directions.—A.P.-C.

Tissue Paper. P. Piette. Fr. pat. 794,670.—In order to increase the wet strength of tissue papers, particularly those that are intended to undergo subsequent mechanical processing such as creping, about 2 to 3 per cent (based on the dry weight of the paper) of natural or artificial rubber, in the form of an aqueous emulsion, is added to the furnish in the beater. A vulcanizing agent and accelerator may also be added.—A.P.-C.

Waterproofing Paper Pulp, Wood, Etc. José Delorme-Cebrian. Fr. pat. 790,198 (Nov. 15, 1935).—An insoluble metal soap is precipitated in the pulp, etc., by reaction between a resinate or an alkali soap and a soluble metal salt.—A.P.-C.

Paper. Carlton J. O'Neill assignor to Johns-Manville Corp. Can. pat. 356,162 (Feb. 25, 1926).—Three-fourths part by weight of finely divided diatomaceous earth is intimately mixed with 100 parts by weight of an aqueous suspension of fibrous material and pitch.—A.P.-C.

Apparatus for Splicing Paper. Horace Freeman and Léonce Gagné, assignors to Consolidated Paper Corp., Ltd. U. S. pat. 2,037,776 (April 21, 1936).—A soluble cellulose compound is formed into a tape of desired width and constant thickness, preferably about 0.0012 inch. The tape is passed through an organic solvent which wets and plasticizes it and is placed between the broken ends of the sheet, and sealing is effected by passing a hot iron over the sheet to press the parts into intimate contact and to evaporate the solvent.—A.P.-C.

Paper Machine and Process of Making Paper. George A. Engert and George B. Gibson assignors to The Sonbert Machine Co. U. S. pat. 2,036,168 (March 31, 1936).—The invention provides a double-flow vat for cylinder machines, in which two different kinds of stock can be fed into the vat. The paper is formed on an endless wire or felt that passes around a cylinder mold immersed in the vat. Large drain openings are provided on each end of the cylinder to maintain the interior practically free from liquid. The top part of the cylinder is sealed from the atmosphere by means of a suitable cap and drain or suction boxes are provided at the sides of the cap to aid the formation of the sheet.—A.P.-C.

Method of Making Paper. Frank J. Lang assignor to International Paper Co. U. S. pat. 2,041,294 (May 19, 1936).—In the manufacture of paper containing an alkaline filler such as calcium carbonate the white water is treated with alum, the fibers are separated by means of a suitable filter, the recovered fibers are returned to the beaters, and the separated water is treated with alum and then returned to the system at a point prior to the beaters.—A.P.-C.

Indented Shock Absorbing Cushioning or Packing Paper. John E. Kieffer. U. S. pat. 2,036,051, (March 31, 1936).—In order to prevent "nesting" of superposed plies of indented paper prepared according to Kieffer's U. S. pat. 1,780,526, of Nov. 4, 1930, the indentations or protuberances on at least one side of the sheet are arranged so that they are out of line in several directions on the sheets.—A.P.-C.

Paper Making. Clark T. Henderson. U. S. pat. 2,032,-615 (March 3, 1936).—A smooth white finely finished writing or printing paper is made from a furnish comprising about 75 per cent of incompletely bleached kraft pulp and 25 per cent fully bleached sulphite which is beaten to a desired condition of slowness.—A.P.-C.

Acoustical Fiberboard and Method of Forming Same. James N. Devereux. U. S. pat. 2,033,124 (March 10, 1936).—A water suspension of a mixture of short fine fibers and long fine fibers is introduced into a vat containing a rotating cylinder mold. The short fine fibers are initially matted on the screen of the cylinder mold to form a thin sheet about one-fourth the thickness of the finished sheet which imparts the desired strength to the finished product and is harder and denser than the remaining thickness of the finished product. The remaining long fibers are adhered to the short-fibered mat to form a loose interlaced fiber structure.—A.P.-C.

Apparatus for Making Multicolored Paperboards. Charles F. Schaub. U. S. pat. 2,037,597 (April 14, 1936).—Colored pulp from an auxiliary stock vat is flowed over an inclined flow table that delivers it on to a freshly formed web on a cylinder mold (suitably the last mold of a multi-cylinder board machine) at the point at which the latter emerges from the stock in the vat.—A.P.-C.

Corrugated Paperboard Machine. George W. Swift, Jr., assignor to George W. Swift, Jr., Inc. U. S. pat 2,039,-750 (May 5, 1936).—The invention provides various mechanical features in the construction of a machine for continuously corrugating and double-facing paperboard.—A.P.-C.

Hard Board and Method of Making Same. Thor A. I. Lundbäck assignor to Aktiebolaget Mooch Domsjö Wallboard Co. U. S. pat. 2,037,522 (April 14, 1936).—Finely-divided lignin-containing cellulosic material, such as wood fiber, is subjected together with 0.1 to 10 per cent by weight of an aldehyde to the action of heat and pressure.—A.P.-C.

Synthetic Veneer. Thomas S. Reese. U. S. pat. 2,-035,761 (March 31, 1936).—Fiber board is coated with a surfacer, decoratively printed and coated over in clear

finish. The resultant synthetic veneer is died out to any required shape and united by means of adhesive to a correspondingly shaped base material.—A.P.-C.

Decorative Structural Material. Thomas S. Reese. U. S. pat. 2,035,760 (March 31, 1936).—Latex paper is coated with a suitable surfacer and is then printed, preferably by the intaglio process. The printed paper is then applied by means of a coating of suitable adhesive (*e.g.*, animal or vegetable glue, casein or latex cement) to one surface of a heat- and pressure-deformable board such as asphaltum board.—A.P.-C.

Transfer Paper and Method of Making Same. John Q. Sherman, Albert W. Metzner and John E. Frey, Metzner and Frey assignors to Sherman. U. S. pat. 2,035,768 (March 31, 1936).—Paper sheets are given a continuous carbon coating, and predetermined selected areas are rendered inert either by applying an overlying coating of masking material or by removing the original carbon coating from the desired areas, either operation being preferably performed in a printing press.—A.P.-C.

Coated Paper. Clark C. Heritage assignor to Oxford Paper Co. U. S. pat. 2,034,435 (March 17, 1935).—Paper is coated with a composition formed by precipitating a compound pigment directly upon a base pigment (*e.g.*, precipitating calcium sulphate and aluminum hydroxide directly upon clay suspended in water) and the dried coat is lightly calendered.—A.P.-C.

Coated Paper Manufacture. Joseph H. Swan, 3rd, assignor to The Gardner-Richardson Co. U. S. pat. 2,039,361 (May 5, 1936).—A paper product or container is provided with a composite coating of such character that the coated sheet itself can be formed into a container which is moistureproof and greaseproof to a very satisfactory degree. The coating includes an extremely thin layer of cellulose solution which dries to a very tough odorless and tasteless film, and it also includes a lower layer containing as an essential ingredient a rubber effective material such as rubber latex.—A.P.-C.

Method of Making Decalcomania Papers. John MacLaurin. U. S. pat. 2,036,422 (April 7, 1936).—The first coating of adhesive required for decalcomania purposes is applied to the surface of the backing sheet during the paper making operation, after partial drying but before calendering.—A.P.-C.

Decalcomania Paper. John MacLaurin. U. S. pat. 2,038,118 (April 21, 1936).—A sized paper is used instead of a water leaf paper for the backing sheet, and a special penetrating solution (preferably sulphonated higher alcohols) is used to release the backing sheet from the decalcomania design when the latter is applied to the work.—A.P.-C.

Waterproof, Greaseproof and Odorless Coated Paper. Walter D. Bowlby assignor to Hercules Powder Co. U. S. pat. 2,028,189 (Jan. 21, 1936).—A waterproof, greaseproof and odorless packaging material is obtained by coating paper with starch and with an overlying nitrocellulose coating.—A.P.-C.

Parchment Paper and Process of Making the Same. Fred O. Reiss assignor to The Mantle Lamp Co. of America. U. S. pat. 2,041,485 (May 19, 1936).—Paper made of "Super-Alpha" pulp is saturated with an alkyd type resin (such as that produced by the condensation of glycerin and phthalic anhydride, with or without the presence of a third component such as benzoic acid, incompletely polymerized in the process of manufacture) that is melted and mixed with a suitable plasticizer such as tricresylphosphate.—A.P.-C.

Process of Making Siding Elements. Clarence R. Eckert assignor to The Barrett Co. U. S. pat. 2,035,871 (March 31, 1936).—In the production of siding elements that simulate courses of bricks, a wide web of felt is coated with asphalt, etc., strips of tissue paper are applied longitudinally at spaced intervals, and suitable granular material is applied over the whole web, but adheres only to the areas that are not covered with tissue paper. Mica dust or talc is applied to the back of the web. The latter is then cut to product elements that have an upper portion uncoated with granular material, and a lower portion covered with granular material and having slots extending from the edge inwards to produce brick-simulating tabs. When applied on a wall, only the lower portion is exposed to the weather.—A.P.-C.

Process and Apparatus for Producing Variegated Roofing. Gottfried Hultberg assignor to The Barrett Co. U. S. pat. 2,037,788 (April 21, 1936).—A continuously moving roofing web is surfaced to produce a variegated effect by moving the sheet under a rotating distributor roll which receives on its circumferential surface granular material of one color from a hopper in which the roll is mounted. A number of spaced wavy streams of granular material of a contrasting color are superimposed on the granular material on the circumferential surface of the roll. The resultant mixture of granules is discharged by the rotation of the roll on to the moving sheet.—A.P.-C.

Roofing Granule and Process of Making the Same. Edward A. Leonard assignor to Orenda Corp. U. S. pat 2,037,802 (April 21, 1936).—Clay is worked to a suitable plastic condition, a coloring matter being added if desired, and then spread in a thin layer of not more than 1/16 inch thickness, and preferably slightly less, dried, crushed and screened, and the resulting granules of the right size are burned to a hard, substantially insoluble state. The fines are reworked by mixing with a fresh batch of raw clay.—A.P.-C.

Apparatus for Making Roofing. Lester Kirschbraun assignor to The Patent and Licensing Corp. U. S. pat. 2,041,419 (May 19, 1936).—Roofing elements are supported from an endless conveyor which carries them for a portion of its travel in a substantially vertical but swingable position during which time the coating material is applied to the desired portions of the elements, the arrangement of the conveyor and the supporting mechanism being such that for a portion of the travel of the conveyor, following the point at which the coating material is applied, the elements will be positioned substantially horizontally and in partially overlapped relation, in which position the mineral surfacing material is applied to the coated areas.—A.P.-C.

Laminated Roofing or Sheet Product. Clements Batcheller. U. S. pat. 2,041,041 (May 19, 1936).—Roofing or sheathing elements are formed of a base portion composed of fibrous material, hydraulic cement and a small amount of asphalt, over which is applied a thin layer of a mixture of pigment and cement, the two portions being combined by pressure.—A.P.-C.

Manufacture of Roofing Elements. John C. Sherman assignor to Brown Co. U. S. Pat. 2,033,488 (March 10, 1936).—A web is formed by depositing the fibers from suspension in air or equivalent gaseous vehicle, the web being initially built up to a considerable thickness with cellulose fiber on which is deposited a thinner layer of asbestos fiber. The web is made of tapering thickness, so that the shingles made therefrom taper from the butt edge to the rear edge. The use of an "air-laid," instead of a "water-laid" felt permits of incorporating a larger amount of asphalt, etc.—A.P.-C.

Roofing Element. Charles S. Reeve assignor to The Barret Co. U. S. pat. 2,037,268 (April 14, 1936).—A comparatively inexpensive, light, rigid, fire-resistant shingle is

made from a fibrous base composed of coarse fibrous material such as annual vegetable crop fibers, either along or admixed with suitable fillers such as paper stock, rag stock, asbestos, or other mineral fibers. The base is preferably made on a paper or board machine, and is at least ⅛ of an inch thick. The base is saturated with waterproofing material such as asphalt, preferably under vacuum; a coating of waterproof bitumen may be applied to one or both faces, and granular mineral material of one or more colors may be applied to and embedded in the coating.—A.P.-C.

Method of Manufacturing Paper Tacking Strips. Leslie F. Barnum. U. S. pat 2,037,205 (April 14, 1936).—Paper ribbons are passed through molten asphalt and the excess asphalt is removed. The impregnated ribbons are cooled below the melting-point of the asphalt and twisted into a rope. The rope is compressed into a compact mass, sufficient heat being generated by the compression to render the asphalt adhesive.—A.P.-C.

Stereotype Mat. Arlie W. Schorger assignor to Burgess Cellulose Co. U. S. pat. 2,041,092 (May 19, 1936).—The casting properties of a stereotype mat are improved without impairing its strength and flexibility by coating the mat with an acid or an oxidizing agent (such as sulphanilic acid, picric acid, potassium perchlorate, etc.) which is not more than 5 per cent soluble in water at 30° C. and appreciably soluble in hot water, and heating the mat to a temperature at which the moisture is expelled rapidly.—A.P.-C.

Printed Waxed Paper. Frederic A. Rapley. U. S. pat. 2,040,564 (May 12, 1936).—Printed translucent paper is produced by applying a wax coating to one side only of the sheet, printing on the unwaxed surface, and subsequently heating the sheet to produce penetration of the wax through the sheet and develop its latent translucency.—A.P.-C.

Method of Producing Moistureproof and Airtight Materials. Wilhelm J. H. Hinrichs. U. S. pat. 2,040,608 (May 12, 1936).—A coating of latex that has been concentrated by centrifuging and purified by washing with ammonia water is applied to at least one surface of each of two or more plies of paper, the plies are dried separately and combined by pressing.—A.P.-C.

Paper Making. George A. Richter assignor to Brown Co. U. S. pat. 2,038,679 (April 28, 1936).—Hydroxycellulose ethers in fibrous form are incorporated into the furnish.—A.P.-C.

New England TAPPI Discussed Felts

The New England Section of the Technical Association of the Pulp and Paper Industry met at the Berkshire Hunt and Country Club, Lenox, Mass., October 17, 1936. Roger C. Griffin, Chairman, presided.

G. N. Collins, president of National TAPPI and a guest at this meeting, extended the greetings of the National Association and spoke briefly of the important part the association holds in the industry. He also spoke of its increasing membership both in Contributing and Corporate members within the last few years. Mr. Collins stressed the importance of science to industry and the position which scientists hold in relation to the general welfare of the country.

Clark C. Heritage, past president of National TAPPI, and a member of the New England Section, complimented the section on its splendid programs and good fellowship, and expressed his regrets at not being able to attend more of these meetings. He hopes that this section would continue to hold the important place that it has merited in relation to the National Association.

Among those present were: G. N. Collins, President of TAPPI, New York, N. Y.; Mr. and Mrs. C. C. Heritage, Oxford Paper Company, Rumford, Me.; Mr. and Mrs. F. C. Clark, Skinner Sherman, Inc., Boston, Mass.; Mr. and Mrs. R. C. Griffin, A. D. Little, Inc., Cambridge, Mass.; Mr. and Mrs. A. F. Cosby, American Writing Paper Company, Holyoke, Mass.; Mr. and Mrs. Stephen Stapley, Chemical Paper Company, Holyoke; Mr. and Mrs. Ralph Carter, Springfield, Mass.; Mr. and Mrs. George Carroll, American Writing Paper Company, Holyoke; Mr. and Mrs. Kendrick Coachman, Taylor Instrument Cos., Schenectady, N. Y.; Harry Keating, Smith Paper, Inc., Lee, Mass.; J. G. Ritchey, Dennison Manufacturing Company, Framingham, Mass.; Arthur Hobday, Southworth Paper Company, W. Springfield, Mass.; E. A. Rees, F. C. Huyck & Sons, Albany, N. Y.; Herbert Hobday, Mountain Mill Paper Company, Lee, Mass.; P. B. Holden, Rising Paper Company, Housatonic, Mass.; J. B. Calkin, Dennison Manufacturing Company, Framingham, Mass.; Cornelius Stapley, Chemical Paper Company, Holyoke, Mass.; Francis Gillispie, American Writing Paper Company, Holyoke; W. J. Burke, General Dyestuff Corporation, Providence, R. I.; A. H. Johnson, Johnson & Wierk, Inc., New York, N. Y.; H. C. Friel, Wood Flong Corporation, Hoosick Falls, N. Y.; J. M. McGarry, Crane & Co., Dalton, Mass.; J. W. Hagar, same company; W. L. Foote, B. F. Perkins Sons, Holyoke; W. J. Glendon, Crane & Co., Dalton, Mass.; William Powers, Smith, Inc., Lee, Mass.; J. P. Thomas, Rohm & Haas, Company., Philadelphia, Pa.; E. A. Richardson, Smith Paper, Inc., Lee, Mass.; E. O. Reed, L. B. Tucker, both of Crane & Co., Dalton, Mass.; W. O. Johnson, Westfield, Mass.; W. P. Richardson, A. D. Little, Inc., Cambridge, Mass.; Walter Trotman, W. Springfield, Mass.; F. H. Lovenberg, Mathieson Alkali Works, Providence, R. I.; R. H. Dempsey, and C. F. Young, Rising Paper Company, Housatonic, Mass.; Miss Helen Kiely, American Writing Paper Company, Holyoke.

Malone Paper Co. To Reorganize

[FROM OUR REGULAR CORRESPONDENT]

MALONE, N. Y., October 19, 1936—A petition was filed this week in federal court by the Malone Paper Company for permission to reorganize. The company has been in equity receivership since the summer of 1932. Judge Bryant appointed the temporary receivers of 1932 as receivers, including Louis Bittner, Charles H. Clark and Clarence E. Kilburn. The mill property is valued at $200,000 and timberland at $1,000. The liabilities are $212,335 plus liabilities of $27,300 under receivership.

Fred Shew Goes With Weston Co.

XENIA, Ohio, October 19, 1936—Fred Shew, for more than three years superintendent of the Hagar Straw Board and Paper Company plant at Cedarville, has resigned to become production manager for the Weston Company, with headquarters at Dayton, which owns five mills in as many different cities. It was indicated the vacancy will remain unfilled for the present. Mr. Shew will continue to maintain his residence in Cedarville.

Second Report of Pulp Evaluation Committee of Great Britain Available

The Second Report of the Pulp Evaluation Committee of Great Britain has just been issued and may be bought through the Book Department of TAPPI, 122 E. 42nd street, New York, at $4 per copy to members and $5 per copy to non-members. This price includes customs and duty charges.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING OCTOBER 17, 1936

CIGARETTE PAPER

R. J. Reynolds Tobacco Co., *Pr. Harding,* Havre, 50 cs.; De Mauduit Paper Corp., *Pr. Harding,* 176 cs.; Standard Products Corp., *Pr. Harding,* 44 cs.; Champagne Paper Corp., *Normandie,* Havre, 546 cs.; De Mauduit Paper Corp., *Normandie,* Havre, 2 cs.; R. J. Reynolds Tobacco, Co., *Washington,* Havre, 133 cs.

WALL PAPER

A. W. Fenton Co. Inc., *American Farmer,* London, 1 cs.; ———, *Hamburg,* Hamburg, 6 cs.; J. F. Kilroy Co., *Hamburg,* Hamburg, 2 bls.; ———, *Europa,* Bremen, 1 cs.

NEWSPRINT

N. Y. Post, *Flint 2nd,* Port Alfred, 658 rolls; Gilman Paper Co., *Flint 2nd,* Port Alfred, 538 rolls; News Syndicate Co., *G. T. D.,* Gatineau, 304 rolls; Jay Madden Corp., *Sagoporack,* Kotka, 357 rolls; Jay Madden Corp., *Scanpenn,* Kotka, 431 rolls; Lunham & Reeve, Inc., *Scanpenn,* Kotka, 263 rolls; Jay Madden Corp., *Washington,* Hamburg, 194 rolls; Jay Madden Corp., *Hamburg,* Bremen, 482 rolls; Perkins Goodwin & Co., *Hamburg,* Hamburg, 245 rolls.

PRINTING PAPER

———, *Saturnia,* Trieste, 14 rolls; R. J. Saunders, *Aquitania,* Southampton, 3 cs.; Jay Madden Corp., *Scanpenn,* Kotka, 183 rolls; L. A. Consmiller, *Hamburg,* Bremen, 32 cs.

WRAPPING PAPER

Jay Madden Corp., *Sagoporack,* Mantyluoto, 854 rolls, 76 bls.; Globe Shipping Co., *Hamburg,* Hamburg, 47 rolls.

PACKING PAPER

A. J. Bullinger, *Black Falcon,* Rotterdam, 12 cs.; A. J. Bullinger, *Beemsterdyk,* Rotterdam, 21 cs.

FILTER PAPER

H. Reeve Angel & Co. Inc., *American Farmer,* London, 10 cs.; ———, *American Farmer,* London, 3 cs.; J. Manheimer, *Aquitania,* Southampton, 79 bls.

DRAWING PAPER

H. Reeve Angel & Co. Inc., *American Farmer,* London, 2 cs.; Winsor Newton, Inc.. *Britannic,* London, 3 cs.; The Morilla Co., *Ingria,* Marseilles, 2 cs.

SURFACE COATED PAPER

Gevaert Co. of America, *Pennland,* Anewerp, 111 cs.

METAL COATED PAPER

K. Pauli Co., *Hamburg,* Bremen, 20 cs.

BARYTA COATED PAPER

———, *Europa,* Bremen, 186 crates.

BASIC PAPER

———, *Hamburg,* Bremen, 10 cs.

PHOTO PAPER

J. J. Gavin, *Aquitania,* Southampton, 7 cs.; ———, *Hamburg,* Hamburg, 2 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Carinthia,* Liverpool, 5 cs. (simplex).

DECALCOMANIAS

Sellers Transportation Co., *Hamburg,* Hamburg, 39 cs.

COLORED PAPER

———, *Pennland,* Antwerp, 8 cs.

GUMMED PAPER

———, *Europa,* Bremen, 5 cs.

PAPER TUBES

———, *Hamburg,* Bremen, 73 cs.; ———, *Europa,* Bremen, 44 ctns.

CARD BOARDS

Metropolitan Importing & Manfg. Co., *Washington,* Hamburg, 12 cs.; American Express Co., *Hamburg,* Hamburg, 125 cs.

STRAW BOARDS

———, *Veendam,* Rotterdam, 70 rolls.

MISCELLANEOUS PAPER

———, *Saturnia,* Trieste, 155 rolls; Jay Madden Corp., *Hamburg,* Hamburg, 43 bbls.; American Express Co., *Hamburg,* Hamburg, 1 cs.; International F'd'g. Co., *Hamburg,* Hamburg, 6 cs.; ———, *Hamburg,* Hamburg, 450 rolls; Atlantic F'd'g. Co., *Hamburg,* Hamburg, 8 cs.; American Express Co., *Europa,* Bremen, 27 cs.

RAGS, BAGGINGS, ETC.

Johns Manville Corp., *Indep. Hall,* Havre, 120 bls. rags; R. J. Ross & Co. Inc., *Indep. Hall,* Havre, 172 bls. rags; ———, *Indep. Hall,* Dunkirk, 207 bls. rags; Royal Manfg. Co., *Indep. Hall,* Dunkirk, 42 bls. cotton waste; E. J. Keller Co. Inc., *Livenza,* ———, 31 bls. rags; Castle & Overton, Inc., *Uruguayo,* Buenos Ayres, 424 bls. dark cottons; Castle & Overton, Inc., *Uruguayo,* Buenos Ayres, 267 bls. bagging, 72 bls. tares; R. & V. Miller, *Black Falcon,* Rotterdam, 9 bls. rags; ———, *American Farmer,* London, 34 bls. rags; Castle & Overton, Inc., *Pr. Harding,* Hamburg, 219 bls. rags; E. J. Keller Co. Inc., *Pr. Harding,* ———, 130 bls. paper stock; Philadelphia National Bank, *Pr. Harding,* Havre, 77 bls. rags; G. A. Henshaw & Son, *Pennland,* Antwerp, 239 bls. flax waste; E. J. Keller Co. Inc., *Pennland,* ———, 111 bls. bagging; J. Levy & Son, *Yucatan,* Havana, 11 bls. rags; E. J. Keller Co. Inc., *Black Tern,* ———, 137 bls. bagging; R. J. Ross & Co., Inc., *Black Tern,* Antwerp, 245 bls. bagging; J. Eisenberg & Co., *Black Tern,* Antwerp, 20 bls. rags; Darmstadt Scott & Courtney, *Black Tern,* Antwerp, 54 bls. bagging; Irving Trust Co., *Black Tern,* Antwerp, 65 bls. bagging; ———, *Montreal City,* Bristol, 105 bls. rags; S. Shapiro & Sons, *Sagoporack,* Gdynia, 120 bls. rags; Banco Coml. Italiane Trust Co., *Sagoporack,* Gdynia, 78 bls. rags; E. J. Keller Co. Inc., *Ingria,* ———, 55 bls. rags; E. J. Keller Co. Inc., *Exermont,* ———, 355 bls. paper stock; Chase National Bank, *Hamburg,* Hamburg, 57 bls. rags; Darmstadt Scott & Courtney, *Express,* Piraeus, 226 bls. rags, 72 bls. old

linseys; E. J. Keller Co. Inc., *Waukegan,* ———, 160 bls. paper stock; E. J. Ross & Co. Inc., *Excambion,* Alexandria, 123 bls. rags; ———, *Excambion,* Alexandria, 150 bls. rags; Harris Goldman Co., *Excambion,* Alexandria, 73 bls. rags; W. Steck & Co., *Excambion,* Alexandria, 59 bls. bagging, 38 bls. old garments, 84 bls. rags; R. Blank, *Excambion,* Alexandria, 27 bls. old cottons; Castle & Overton, Inc., *Excambion,* Alexandria, 65 bls. rags; De Benedetto Inc., *Excambion,* Marseilles, 66 bls. rags; E. J. Keller Co. Inc., *Excambion,* ———, 246 bls. bagging, 732 bls. paper stock; W. R. Grace & Co., *Nishiro Maru,* Shanghai, 150 bls. cotton waste; J. Eisenberg & Co., *Beemsterdyk,* Rotterdam, 3 bls. rags; Great Eastern Packing & Paperstock Corp., *Beemsterdyk,* Rotterdam, 98 bls. bagging; Great Eastern Packing & Paperstock Corp., *Lehigh,* Liverpool, 236 bls. picker waste; Castle & Overton, Inc., *Lehigh,* Liverpool, 140 bls. bagging; ———, *Lehigh,* Leith, 96 bls. rags.

BONE GLUE

———, *Saturnia,* Trieste, 285 bags; ———, *Hamburg,* Hamburg, 200 bags.

OLD ROPE

Manufacturers Trust Co., *Britannic,* London, 79 coils; W. Steck & Co., *Black Tern,* Antwerp, 45 coils; Chase National Bank, *Montreal City,* Bristol, 158 coils; G. W. Millar & Co. Inc., *Montreal City,* Bristol, 33 coils; ———, *Montreal City,* Bristol, 50 coils.

CASEIN

———, *Indep. Hall,* Havre, 150 bags; ———, *Normandie,* Havre, 333 bags; ———, *Aquitania,* Southampton, 333 bags; ———, *Pilsudski,* Gdynia, 411 bags; ———, *Hamburg,* Hamburg, 70 bags.

WOOD PULP

Mead Sales Co. Inc., *Simon von Utrecht,* Sundsvall, 210 bls. sulphite, 42 tons; Mead Sales Co. Inc., *Simon von Utrecht,* Sundsvall, 210 bls. chemical pulp, 42 tons; Johaneson Wales & Sparre, Inc., *Simon von Utrecht,* Sundsvall, 900 bls. sulphite, 175 tons; Bulkley Dunton & Co., *Simon von Utrecht,* ———, 6,575 bls. wood pulp, 1,275 tons; Brown Bros. Harriman & Co., *Simon von Utrecht,* Hernosand, 4,050 bls. sulphite, 656 tons; Brown Bros. Harriman & Co., *Simon von Utrecht,* Hernosand, 2,423 bls. sulphate, 403 tons; ———, *Pr. Harding,* Hamburg, 509 bls. wood pulp; ———, *Saturnia,* Trieste, 80 bls. wood pulp; Lagerloef Trading Co., *Sagoporack,* Mantyluoto, 1,355 bls. sulphite, 230 tons; Lagerloef Trading Co., *Sagoporack,* Mantyluoto, 910 bls. mechanical pulp, 182 tons; Perkins Goodwin & Co., *Sagoporack,* Gdynia, 200 bls. wood pulp, 30 tons; Lagerloef Trading Co., *Scanpenn,* Helsingfors, 480 bls. sulphate, 89 tons; Lagerloef Trading Co., *Scanpenn,* Helsingfors, 342 bls. sulphite, 57 tons; Lagerloef Trading Co., *Scanpenn,* Kotka, 841 bls. sulphite, 157 tons; ———, *Hamburg,* Hamburg, 162 bls. wood pulp, 25 tons.

WOOD PULP BOARDS

Jay Madden Corp., *Scanpenn,* Kotka, 91 rolls, 67 bls.; Fibre Case & Novelty Co., *Washington,* Hamburg, 21 bls.; ———, *Hamburg,* Hamburg, 300 bls.

NEWARK IMPORTS

WEEK ENDING OCTOBER 17, 1936

H. G. Craig Co., *Donpaco,* Donnacona, 322 rolls newsprint.

BOSTON IMPORTS

WEEK ENDING OCTOBER 17, 1936

———, *Indep. Hall,* Dunkirk, 127 bls. paper stock; Irving Trust Co., *Indep. Hall,* Dunkirk, 98 bls. bagging; Stone & Downer Co., *Black Falcon,* Antwerp, 143 rolls wrapping paper; International Purchasing Co., *Black Falcon,* Antwerp, 100 coils old rope; Royal Manfg. Co., *Black Falcon,* Antwerp, 70 bls. cotton waste; ———, *Black Falcon,* Rotterdam, 48 bls. wood pulp boards; ———, *Black Falcon,* Rotterdam, 26 bls. rags; C. H. Powell Co., *Black Falcon,* Rotterdam, 580 rolls straw boards; E. Butterworth & Co. Inc., *Black Falcon,* 295 bls. picker waste; ———, *Saturnia,* Trieste, 200 bags hide glue; Atkinson Haserick & Co., *Excambion,* Genoa, 4 cs. paper; E. J. Keller Co. Inc., *Excambion,* ———, 270 bls. rags, 33 bls. old garments; C. H. Powell Co., *Beemsterdyk,* Rotterdam, 25 bls. cotton waste; Horton & Hubbard Manfg. Co. Inc., *Beemsterdyk,* Rotterdam, 24 bls. wood pulp boards; Bulkley Dunton & Co., *Svaneholm,* ———, 525 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING OCTOBER 17, 1936

Johaneson Wales & Sparre, Inc., *Simon von Utrecht,* Sundsvall, 575 bls. sulphite, 105 tons; Mead Sales Co. Inc., *Simon von Utrecht,* Sundsvall, 2,400 bls. sulphite, 400 tons; Attery Bros. Inc., *Simon von Utrecht,* Sundsvall, 300 bls. dry pulp, 50 tons; Perkins Goodwin & Co., *Simon von Utrecht,* 600 bls. sulphite, 100 tons; Perkins Goodwin & Co., *Simon von Utrecht,* Sundsvall, 525 rolls newsprint; National Pulp & Paper Co. Inc., *Simon von Utrecht,* Sundsvall, 100 rolls newsprint; Brown Bros. Harriman & Co., *Simon von Utrecht,* Hernosand, 2,453 bls. sulphite, 380 tons; ———, *Simon von Utrecht,* Stugsund, 250 bls. sulphite, 50 tons; ———, *Simon von Utrecht,* Stugsund, 500 bls. sulphate, 100 tons; Philadelphia National Bank, *Livenza,* Genoa, 13 cs. vellum paper; Castle & Overton, Inc., *Uruguayo,* Buenos Ayres, 38 bls. old stockings; ———, *Black Falcon,* Antwerp, 551 bls. rags; J. M. Hagy Waste Works, *Black Falcon,* Antwerp, 44 bls. rags; E. J. Keller Co. Inc., *Black Falcon,* ———, 698 bls. rags; Lagerloef Trading Co., *Scanpenn,* Helsingfors, 600 bls. ground pulp, 101 tons; Lagerloef Trading Co., *Scanpenn,* Helsingfors, 940 bls. sulphate, 156 tons; Jay Madden Corp., *Scanpenn,* Helsingfors, 21 bbls. paper; Lagerloef Trading Co., *Scanpenn,* Kotka, 2,637 bls. sulphite, 485 tons; Lagerloef Trading Co., *Scanpenn,* Kotka, 500 bls. sulphate, 100 tons; J. W. Hampton Jr. Co., *Scanpenn,* Kotka, 421 rolls newsprint; E. J. Keller Co. Inc., *Ingria,* ———, 410 bls. rags; J. T. Flannery, *Exermont,* Casablanca, 234 bls. rags; J. T. Flannery, *Excambion,* Alexandria, 83 bls. rags; Bulkley Dunton & Co., *Scanmail,* ———, 300 bls. wood pulp; Gottesman & Co. Inc., *Svaneholm,* Sweden, 3,610 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING OCTOBER 17, 1936

———, *Simon von Utrecht,* Stugsund, 625 bls. sulphite, 125 tons; ———, *Simon von Utrecht,* Stugsund, 3,250 bls. sulphate, 650 tons; ———, *Simon von Utrecht,* Hernosand, 1,200 bls. sulphate, 200 tons; ———, *Simon von Utrecht,* Hernosand, 300 bls. sulphite, 50 tons; Johaneson Wales & Sparre, Inc., *Simon von Utrecht,* Sundsvall, 1,290 bls. sulphite, 232 tons; Johaneson Wales & Sparre, Inc., *Simon von Utrecht,* Sundsvall, 1,200 bls. sulphate, 200 tons; Johaneson Wales & Sparre, Inc., *Simon von Utrecht,* 228 bdls. wall board; Mead Sales Co. Inc., *Simon von Utrecht,* Sundsvall, 5,352 bls. sulphite, 892 tons; Bulkley Dunton & Co., *Simon von Utrecht,* ———, 4,900 bls. wood pulp, 980 tons; Lagerloef Trading Co., *Scanpenn,* Kotka, 1,040 bls. mechanical pulp, 208 tons; ———, *Beemsterdyk,* Rotterdam, 232 bls. wood pulp; Pagel Horton & Co. Inc., *Wanja,* Sweden, 3,150 bls. wood pulp; Price & Pierce, Ltd., *Wanja,* ———, 1,800 bls. unbleached sulphite; Price & Pierce, Ltd., *Wanja,* ———, 3,600 bls. ground wood; W. H. Mason, *Lehigh,* Glasgow, 54 coils old rope.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, October 21, 1936.

Sentiment in the local paper market continues optimistic. Demand for the various standard grades is holding up well and supplies are moving into consumption in good volume. Sales forces of the leading paper organizations express optimism regarding the future trend. Prices are generally holding to schedule.

The newsprint paper market shows signs of improvement. Production in the United States, Canada and Newfoundland is being maintained in increased volume to take care of the prevailing demand from publishers. Advertising lineage and circulations are running ahead of last year's record. The price situation is unchanged.

Steadiness prevails in the fine paper market. Demand for book, cover, bond and ledger papers is well sustained. Prices are holding to schedule. Tissues are going forward in good volume. The coarse paper market is exhibiting a strong undertone. Request for paper board is brisk and quotations firmer.

Mechanical Pulp

The ground wood pulp market is in a stronger position, due to the effect of the recent long summer drought on the industry. Manufacturing operations in North America and abroad have been speeded, to make up for lost time. The recently advanced quotations are being maintained without difficulty.

Chemical Pulp

Conditions in the chemical pulp market are favorable to the producers. Quotations on practically all foreign and domestic grades are firmer. Bleachable grades of unbleached sulphite pulp have advanced from five to ten cents per 100 pounds, while the price of imported kraft pulp is ten cents per 100 pounds higher.

Old Rope and Bagging

The old rope market is attracting more paper mill interest. Demand for both domestic and imported old manila rope is better. Small fixed rope is fairly active. Old rope prices are steadier. The bagging market is strong. Inquiries for scrap and gunny bagging are persistent. Prices are firm.

Rags

Business in the domestic rag market is fairly brisk. New and old cotton rags are holding up well. No. 1 white shirt cuttings are in good request, both for domestic and export account. Roofing grades are firmer, with supplies moving into consumption freely. No radical changes transpired in the imported rag market.

Waste Paper

The paper stock market is more lively. Board mill demand for the lower grades is insistent. Strictly folded news and No. 1 mixed paper are firmer. The higher grades of waste paper are steady. Interest in white envelope cuttings and hard and soft white shavings is well sustained. Book stock is fairly active.

Twine

The local twine market is fairly buoyant. Demand for the various varieties is heavy, due mainly to the steadily increasing request for wrapping paper. Inquiries for future delivery are numerous, out of which a good volume of new orders should result. Prices on both hard and soft fiber twines continue firm.

J. F. Mitchell-Roberts Back From Far East

J. F. Mitchell-Roberts, export manager for Oliver United Filters Inc. has just returned from a six months tour of the Far East where he visited many plants using Oliver United filters in the Philippines, Japan, Manchukuo and China. Among the operations most frequently surveyed were mining, sugar, pulp and paper, chemical, sewage treating, cement and petroleum. Of particular interest were the Oliver and Oliver-Young Pulp Deckers and Washers.

Mr. Roberts reports favorable progress in these countries in adopting modern methods of production and in making use of American-made equipment and American ideas.

Mead Corp. To Meet On Dividends

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, October 19, 1936—The annual meeting will be held at 11 West Monument Avenue, Dayton, on October 30, of shareholders in the Mead Corporation, Chillicothe, Ohio, to consider and vote on a proposed amendment to the articles of incorporation to permit the company to pay accumulated preferred dividends in common stock and cash.

George H. Mead, of this city, president of the Corporation, addressed a letter to the shareholders, explaining the proposal.

Atlas Powder Co. To Build New Plant

The Atlas Powder Company, Delaware Trust Building, Wilmington, Del., has plans under way for new plant on the River Road, Rose Hill district, between Wilmington and New Castle, Del., where tract of about 160 acres of land recently was acquired. New plant will be given over to the manufacture of special industrial chemicals for use in the paper trade, as well as textile, leather and affiliated industries. It will consist of several large units, estimated to cost close to $1,000,000. E. W. Maynard, vice-president, is in charge of the industrial chemical division of company, and will direct operations at the new plant. Leland Lyon is president.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, October 21, 1936.

BLANC FIXE.—Conditions in the blanc fixe market are fairly satisfactory. Prices are holding to schedule. The pulp is quoted at $42.50 to $45 per ton, in bulk; while the powder is selling at 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—The bleaching powder market is moderately active. Shipments against contract are moving in fairly good volume for the season. Prices are steady and unchanged. Bleaching powder is quoted at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market is firm. Domestic standard ground is quoted at 17 and finely ground at 17½ cents; while French and Argentine standard ground are selling at 17 and finely ground at 17½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA—Demand for caustic soda is fairly persistent. The contract movement is well up to average. Prices are steady. Solid caustic soda is quoted at $2.55 to $2.60; while the flake and ground are selling at $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY—The china clay market is displaying strength. Demand from the mills is brisk. Prices are steady. Imported china clay is quoted at $12.50 to $21 per ton, ship side; while domestic paper making clay is selling at $6.50 to $12 per ton, ship side.

CHLORINE—Steadiness prevails in the chlorine market. The contract movement is normal. Inquiries for future delivery are fairly numerous. Prices are well maintained. Chlorine is quoted at $2.15 to $2.25 per 100 pounds, in tank cars, at works.

ROSIN—The rosin market fluctuated slightly. Paper making gum rosin is quoted at $6.00 and wood rosin at $6.05 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $3.05 per 100 pounds, in tank cars, at works.

SALT CAKE—Paper mill demand for salt cake is fairly heavy. Prices are holding to schedule without difficulty. Salt cake is quoted at $12 to $13; chrome salt cake at $11 to $12 per ton, at works; while imported salt cake is selling at $12 to $13 per ton.

SODA ASH—The soda ash market is exhibiting a strong undertone. Contract shipments are moving freely. Prices are firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH—No radical changes transpired in the starch market. Demand from the paper mills is fairly active. Prices continue steady. Special paper making starch is quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA—Business in the sulphate of alumina market is holding up well. Prices are generally holding to schedule. Commercial grades are quoted at $1.35 to $1.60; while iron free is selling at $2 to $2.25 per 100 pounds, in bags, at works.

SULPHUR—The sulphur market continues steady. Yearly contracts are quoted at $18 per ton, in bulk, on orders of 1,000 tons, or over, and $20 on smaller quantities. On spot and near by car loads the quotation is $21 per ton. All quotations are in car lots, at works.

TALC—Supplies of talc are moving into consumption in good volume for the time of year. Prices are holding to schedule. Domestic talc is quoted at $16 to $18 per ton, at eastern mines; while imported talc is selling at $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.50 @	8.50
No. 2 Sulphite	6.50 @	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50
Book, B Grade, Cased		
S. & S. C.	5.85 @	6.60
S. & S. C. Litho.	6.10 @	6.85
M. F.	5.60 @	6.35
No. 4 Grade		
Coated and Enamel	6.80 @	7.65
Coated Litho	6.80 @	7.65
Tissues—Per Ream—		
White No. 1	.82½ @	—
White No. 1 M. G.	.77½ @	—
White No. 1½	.62½ @	—
White No. 2	.60 @	—
Anti-Tarnish M. G.	.67½ @	—
Colored	.80 @	—
Kraft	.67½ @	—
Manila	.60 @	—
Unbleached Toilet	2.60 @	3.30
Bleached Toilet	3.94 @	5.26
Paper Towels—		
Unbleached	2.10 @	3.35
Bleached	3.30 @	3.70
Manila—		
No. 1 Jute	9.00 @	9.25
No. 2 Jute	7.75 @	8.50
No. 1 Wood	4.00 @	5.25
No. 2 Wood	3.50 @	4.00
Fibre Papers—		
No. 1 Fibre	4.25 @	5.50
No. 2 Fibre	4.00 @	4.75

(Delivered New York)

News, per ton—		
Roll, contract	41.00 @	—
Sheets	46.00 @	—
Kraft—		
No. 1 Northern	4.25 @	4.75
Standard	4.00 @	4.12½
Southern	3.87½ @	—
Glazed	4.37½ @	—
Striped	4.62½ @	—
Boards, per ton—		
News	32.50	@35.00
Chip	35.00	@37.50
Sgl. Mla. Ll. Chip	47.50	@50.00
Jute Lined Chip	50.00	@52.50
Kraft Liners	62.50	@65.00
White Pat. Coated	60.00	@62.50
Binders Boards	67.00	@75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—		
Moist	25.00	@26.00
Dry	25.00	@26.00
(Delivered)		
No. 1 Domestic and Canadian	28.00	@29.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—		
Division 1	2.70 @	3.30
Division 2	2.65 @	2.75
Division 3	2.60 @	2.70
Prime Qualities—		
Class 1. All Prime Easy Bleaching	2.20 @	2.25
Other Than Easy Bleaching—		
Class 2. Higher than Standard	2.10 @	2.20
Class 3 Standard	2.05 @	2.10
Class 4. Lower than Standard	1.95 @	2.00

(On Dock, Atlantic Ports)

Kraft Bleached	3.00 @	3.25
Kraft Light & Strong	2.10 @	2.20
Kraft No. 1	1.95 @	2.15
Kraft No. 2	1.85 @	1.90

(F. o. b. Pulp Mill)

Kraft Domestic	1.80 @	2.00

(Delivered)

Soda Bleached	2.60 @	—

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	7.75 @	8.00
Silesias No. 1	5.50 @	5.75
New Unbleached	8.25 @	8.50
New Soft Blacks	3.75 @	4.00
Blue Overall	6.75 @	7.00
Fancy	3.00 @	3.25
Washables	2.25 @	2.50
Mixed Khaki Cuttings	3.50 @	3.75
O. D. Khaki Cuttings	4.25 @	4.50

Old Rags

White, No. 1—		
Repacked	3.25 @	3.50
Miscellaneous	2.75 @	3.00
White, No. 2—		
Repacked	2.25 @	2.50
Miscellaneous	1.75 @	2.00
Thirds and Blues—		
Repacked	2.00 @	2.25
Miscellaneous	1.90 @	2.00
Roofing Rags—		
No. 1	Nominal	
No. 2	1.60 @	1.65
No. 3 (bagging)	1.50 @	1.55
No. 4	1.10 @	1.15
No. 5A	1.00 @	1.05

Foreign Rags

New Rags

New Dark Cuttings	2.25 @	2.50
New Mixed Cuttings	2.00 @	2.25
New Light Silesias	5.50 @	5.75
Light Flannelettes	5.50 @	5.75
New White Cuttings	7.00 @	7.50
New Light Oxfords	4.00 @	4.50
New Light Prints	3.00 @	3.25

Old Rags

No. 1 White Linens	7.50 @	8.00
No. 2 White Linens	6.50 @	7.00
No. 3 White Linens	4.50 @	5.00
No. 4 White Linens	2.25 @	2.50
No. 1 White Cotton	4.25 @	4.75
No. 2 White Cotton	3.25 @	3.75
No. 3 White Cotton	2.50 @	2.75
No. 4 White Cotton	1.90 @	2.15
Extra Light Prints	2.00 @	2.25
Ord. Light Prints	1.75 @	1.85
Med. Light Prints	1.55 @	1.65
Dutch Blue Cottons	2.25 @	2.50
French Blue Linens	3.50 @	4.00
German Blue Linens	2.50 @	2.75
German Blue Cottons	2.00 @	2.25
Checks and Blues	2.00 @	2.25
Linsey Garments	2.15 @	2.25
Dark Cottons	1.90 @	2.10
Old Shopperies	1.75 @	2.00
New Shopperies	1.75 @	2.00
French Blues	2.25 @	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	2.10 @	2.15
Domestic	1.75 @	1.85
Wool Tares, light	1.50 @	1.75
Wool Tares, heavy	1.85 @	2.05
Bright Bagging	1.70 @	1.75
Manila Rope—		
Foreign	2.75 @	3.00
Domestic	2.75 @	3.00
Jute Strings	2.00 @	2.25
Sisal Strings	2.00 @	2.10
Mixed Strings	.80 @	1.00

Old Waste Papers

(F. o. b. New York)

Shavings—		
White Envelope Cuttings	2.55 @	2.65
Ordinary Hard White No. 1	2.25 @	2.35
Hard White No. 2	2.10 @	2.20
Soft White No. 1	1.95 @	2.05
Flat Stock—		
Stitchless	.65 @	.75
Over issue Mag	.65 @	.75
Solid Flat Book	.55 @	.60
Crumpled No. 1	.35 @	.40
Ledger Stock	.85 @	.90
New B. B. Chips	.30 @	.35
Manilas—		
New Env. Cut	1.75 @	1.85
New Cuttings	1.35 @	1.45
Old Kraft Machine—		
Compressed bales	1.15 @	1.30
News—		
No. 1 White News	1.15 @	1.25
Strictly Overissue	.50 @	.60
Strictly Folded	.50 @	.55
No. 1 Mixed Paper	.40 @	.45

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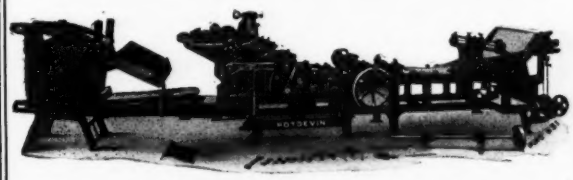

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Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.13¾	@	.16½
Belg. White Hemp	.14¾	@	.18½
India Compress	.14¾	@	.14¾
Fine Polished—			
Fine India	.20	@	.22
Unpolished—			
Box	.09¾	@	.10¼
Paper Makers	.09½	@	.11¾
Tube Rope	.10½	@	.13¼
Wall Paper	.11½	@	.12¾
Wrapping	.15	@	.21
Soft Fiber Rope	.12¾	@	.13¼
(Hard Fibre)			
Bond	.12	@	.20½
Anchor	.11½	@	.13
Manila	.21	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¾
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¾	@	.06½
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.	1.70		
100 Test, per 1000 sq. ft.	1.85		

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Kraffs	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1 Folded News	.42½	@	.45
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.07	@	.07½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	.02½
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	2.00	@	2.25
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¾
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.50	@	1.60
Domestic No. 2	1.40	@	1.50
Roofing bagging	1.10	@	1.20

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.75	@	—
Sisal Rope	2.25	@	2.35
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.25	@	2.50
No. 2	1.00	@	1.10
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.65	@	.70
Manila Cuttings	1.80	@	1.90
Print Manila	.55	@	.60
Container Manila	.55	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.45	@	.50
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.60	@	—
Old Newspapers	.45	@	—

BOSTON

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.50	8.50
No. 2 Sulphite	6.50	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¼	@	—
No. 2 Kraft	.04½	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	39.50	@	—
Straw Board, rolls .009	—	@	35.00
Filled News Board	42.50	@	45.00
Chip Board	40.00	@	42.50
Single Manila Lined Chip	50.00	@	55.00
Single White, Patent Coated News Board (Bender)	60.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.00	@	2.10
No. 1 Soft White	1.75	@	1.85
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.60	@	.70
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
No. 1 Old Manila	.60	@	.65
White Blank News	1.10	@	1.15
No. 1 Kraft	1.15	@	—
Mixed Papers	.35	@	—
Print Manila	.55	@	.60
Container Manilas	.27½	@	—
Old Newspapers	.45	@	.47½
Overissue News	.50	@	—
Box Board Chips	—	@	.25
Corrugated Boxes	.47½	@	.50
Kraft corrugated boxes	.95	@	1.00
Screening Wrappers	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.50	@	2.80
Domestic	2.75	@	—
Transmission Rope	1.25	@	1.35
Jute Rope	2.12½	@	2.25
Jute Carpet Threads	1.00	@	1.10
Gunny No. 1—			
Foreign	1.90	@	2.00
Domestic	1.75	@	1.80
Bleachery Burlap	4.25	@	4.50
Scrap Burlap—			
Foreign	1.90	@	2.00
Domestic	1.60	@	1.75
Scrap Sisal	2.00	@	2.10
Scrap Sisal for Shredding	2.10	@	2.35
Wool Tares, heavy	1.90	@	2.00
New Burlap Cuttings	2.00	@	2.25
Australian Wool Pouches	2.35	@	2.50
Heavy Baling Bagging	1.85	@	2.20
Paper Mill Bagging	1.65	@	1.70
Bagging No. 2	1.10	@	1.25

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03½	@	.03¾
New White No. 1	.07¼	@	.07¾
New White No. 2	.04	@	.04¼
Silesias No. 1	.06	@	.06¾
New Black Silesias	.03½	@	.04¼
Soft Unbleached	.07½	@	.08
Blue Cheviot	.06¼	@	.06¾
Fancy	.03	@	.03¾
Washable	.02	@	.0250
Cottons—According to grades—			
Blue Overalls	6.25	@	6.75
New Black, soft	"	@	"
Khaki Cuttings	.03¾	@	.04
O. D. Khaki	.03¾	@	.04¼
Corduroy	.02¼	@	.03
New Canvas	"	@	"
B.V.D. Cuttings	.07½	@	—

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.50	@	1.60
No. 2	1.35	@	1.45
No. 3	1.25	@	1.30

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.70	@	2.00
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.75	@	1.90
Old Linsey Garments	2.12½	@	2.37½
New Silesias	5.00	@	5.75

TORONTO

Paper

Bond—Delivered—			
No. 5 White	.10¾	@	—
No. 6 White	.10	@	—
No. 5 Tints	.11¾	@	—
No. 6 Tints	.10½	@	—
No. 5 Golden Rod	.12¾	@	—
No. 6 Golden Rod	.12	@	—
Ledgers—			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F.	6.50	@	6.75
No. 2 M. F.	6.25	@	6.50
No. 3 M. F.	5.00	@	5.35
No. 1 S. C.	7.00	@	7.50
No. 2 S. C.	6.50	@	7.00
No. 3 S. C.	5.50	@	6.00
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	Nominal		
Sheets	Nominal		

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.80	@	.90
Light and Crumpled Book Stock	.70	@	.80
Ledgers and Writings	.90	@	1.00
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07½	@	.07¾
Fancy Shirt Cuttings	.02¾	@	.03